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THE
GENERAL PRACTITIONER
AS
A SPECIALIST



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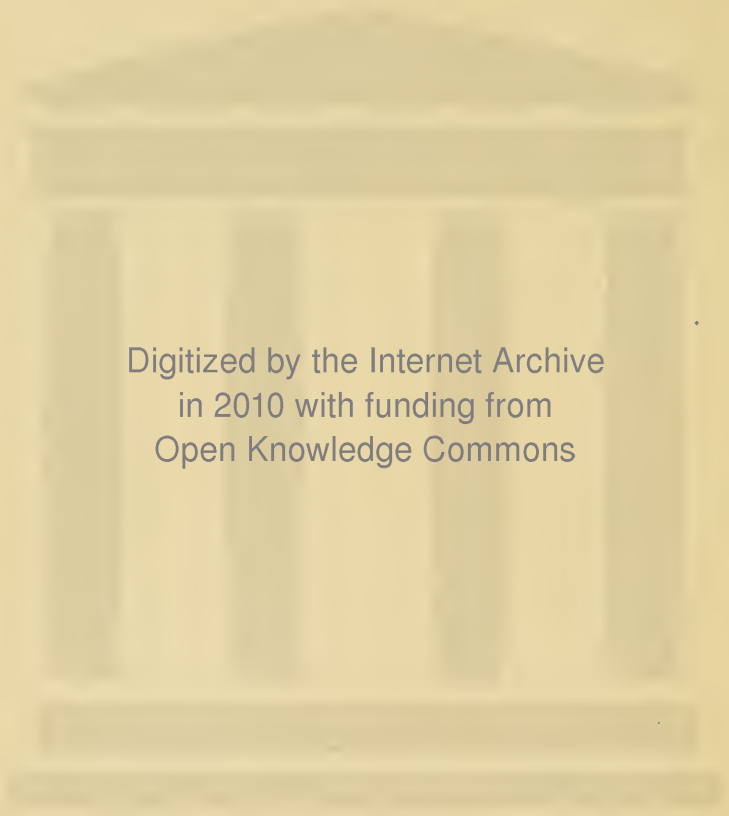


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THE
GENERAL PRACTITIONER
AS A
SPECIALIST

A Treatise Devoted to the Consideration of
Medical Specialties

BY
J. D. ALBRIGHT, M. D.

Third Edition
Revised, Enlarged and Illustrated

PUBLISHED BY THE AUTHOR

PHILADELPHIA, PENNSYLVANIA

1904

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1904.

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PREFACE TO THE THIRD EDITION.

The complete exhaustion of former editions of this work has rendered the publication of this, the Third edition, necessary.

The sense of a well defined feeling of uncertainty present when, thirty months ago, the Second edition of several thousand copies, was launched into a comparatively unexplored sea, is at this time agreeably absent. The cordial reception extended former editions and the many letters of approbation and encouragement received, give instead the assurance of a continuation of good will and support. That this volume will merit the approval of those into whose possession it may come, is my most sincere wish.

Taking advantage of the opportunity, the extent of the work has been somewhat enlarged; new matter has been added and certain subjects have been more thoroughly considered. Several illustrations, reproduced from original photographs, are also a new feature.

As many of the methods of treatment are to a certain extent, an evolution, developed to their present state of perfection by the combined efforts of several minds following the same course, proper credit cannot easily be given. I have, however, made an effort to give credit in the text for suggestions and assistance, wherever due.

Should I have failed in this by oversight neglected one, or overlooked another, let him accept this, my expression of thanks cheerfully acknowledged.

Dr. T. W. Williams, of Milwaukee, Wis., has contributed the chapters under his name, to whom inquiries concerning the same should be addressed.

Continuing my former policy, I will be pleased to correspond or co-operate with any physician into whose hands this may come, recognizing the mutual benefits that accrue from combined efforts and exchange of ideas, and that, if the fates so decree, greater good may be accomplished. "For this was the manner in former time in Israel. * * * for to confirm all things, a man plucked off his shoe and gave it to his neighbor."

THE AUTHOR.

Philadelphia, Pa.

January 1904.

PREFACE TO THE SECOND EDITION.

The gratifying reception accorded the first edition of this work by the medical profession throughout the United States and Canada, as evidenced by the hundreds of commendatory letters received and the rapid exhaustion of the entire edition, has prompted the author, in preparing the second edition, to revise and considerably enlarge it.

In addition to the matter contained in the first edition, the author has complied with the general demand for further and more detailed consideration of some of the subjects therein treated, and has, in addition thereto, added chapters devoted to the consideration of other specialties.

During the past year the author has investigated and purchased a number of the more recent Secret Systems, advertised and sold to the medical profession, all of which are disclosed in this edition.

The author wishes to acknowledge valuable suggestions and assistance from Drs. R. St. J. Perry, C. L. Dana, F. W. McCanon and E. L. Goodall; also from the writings of Agnew, Waugh, Monroe and others who have received due credit throughout the work.

Thanking the profession for their liberal expressions of appreciation and substantial support, the author hopes to merit their continued approbation.

The author will be pleased to correspond or co-operate with any physician into whose hands this may come.

July 1st, 1901.

INTRODUCTORY TO FIRST EDITION.

To that large body of energetic and progressive physicians who have learned to recognize the value of concentrated effort in any one direction, and who appreciate the exceptional advantages to be derived from the use of meritorious remedies and methods of treatment, this work is respectfully offered.

To such, no apology is necessary, as it will fill a vacancy that has long been known to exist; no work of the kind having ever before been placed at their disposal.

To the minority of the profession, those who are contented with their quarter and half century-old methods and ideas, and who without investigation unhesitatingly condemn progress in every form and wherever found, this work will not appeal.

If the highly gratifying results attainable by the use of the information detailed in the following pages be a criterion, no one will hesitate to credit the statement that it embodies the latest and most advanced ideas now employed by the leading specialists in their respective lines of work.

That it will be the means of accomplishing "the greatest good to the greatest number," thereby bringing health and happiness to the patient and professional and financial success to the physician, is the wish of

THE AUTHOR.

May, 1900.

DISEASES OF THE RECTUM AND ANUS.

In these days of Specialism, when so large a number of general practitioners are deserting the ranks to seek fame and fortune along the lines of specialties, it is somewhat strange that the extensive and fertile field of Rectal Diseases is so frequently overlooked and so generally avoided. There is no specialty in medicine in which the material is so plentiful; the indications for treatment so clearly defined; the results so generally satisfactory; the patients so uniformly grateful, and the opportunities for revenue so excellent.

No part of the body is more prone to disease than the rectum, and there are no diseases which as a class are less understood. There are no diseases so uniformly annoying and painful, and none so silently and submissively endured.

In former years, aside from the employment of purely surgical means, the regular medical profession, with but few exceptions, devoted but little time and attention to the treatment of diseases of the rectum and anus, consequently a large portion of this practice passed into the hands of itinerants and charlatans, who have ever been alert to take advantage of opportunities neglected by the profession.

If there were any ground for the opinion, I have heard expressed, that the treatment of rectal diseases suggested a lack of dignity, it would probably be found to spring from the impressions made by the disreputable men and methods formerly associated in this branch of medicine. The title "traveling pile doctor" certainly implies no dignity and less honor, but the legitimate rectal specialist is not to be mentioned in comparison and bears no relation to him whatever.

The impression that rectal work is unclean and unpleasant is probably a strong factor in influencing a physician to adopt some other line of work, yet this should have but little weight when one considers it in comparison with genito-urinary, gynecological or obstetrical work.

Persons of ordinary intelligence and the usual sense of delicacy will foresee the desirability of cleanliness, and in their behalf it must be said, the external appearance of filth is but rarely noticed.

Granting that prior to the inauguration of stringent medical legislation, the country was infested with "traveling pile doctors," whose ignorance prevented them from treating rectal diseases except for revenue only, we must admit that the irregular rectal specialists of to-day are not in their class. As stated in an editorial in the *Medical Record*, "the modern irregular practitioner is less of a fool and an ignoramus than his predecessor. He is sometimes a man of good medical education and experience." Regular practitioners entering this field have in the modern irregular specialist a competitor worthy of their steel, yet by their methods of awakening interest among persons afflicted with rectal diseases, the regular practitioner is benefited.

This fact is perhaps responsible for the interest that has been aroused and which is apparent on all sides, as evidenced by the attention that is now being directed toward this class of diseases, as well as the treatment of hernia by the injection method, the treatment of cancers, etc., all of which have for many years been practically in the hands of the irregulars.

As I stated in an article published in the *Medical Brief*, in December, 1898, on the importance of directing attention toward specialties, "Show me a branch in which the specialist or 'institute' thrives, and I will show you a branch which the general practitioner has neglected."

However, if "straws indicate the course of the wind," and unless all signs fail, the end of another decade will find the majority of the medical profession strongly advocating

and diligently practicing many means and methods which to-day are strenuously opposed and possibly denounced by many of them. The change of attitude toward the non-surgical treatment of rectal diseases is demonstrated by the many leading articles that appear in high grade medical publications, written by men of high professional standing and of excellent repute.

The treatment of hemorrhoids constitutes the major portion of the work of the rectal specialist, yet as he treats these cases successfully he will naturally be led to the investigation and treatment of other forms of rectal diseases, by virtue of the close relationship existing between different diseases. Before passing on to the consideration of the several diseases that appear in the rectum, the advantages and disadvantages of the injection treatment of hemorrhoids, quoting several writers, will be reviewed, as to the inexperienced, or possibly prejudiced, mind there is nothing so convincing as evidence.

If it were not a matter of regret that so strong a prejudice could exist in so honorable and respected a profession, it would be amusing to record the objections that physicians opposed to this method of treatment offer against it. I have before me a clipping from a Western medical journal, written by a Professor of Surgery in a medical college of the West, in which he says: "If sloughing takes place after the injection of carbolic acid into a pile tumor, it will probably be from throwing the fluid through the vein into the areolar tissue beneath. Knowing this to be the case, I was very careful not to do this, but the sloughing came just the same." Later on he states that the solution used was 16% carbolic acid and "this sloughing I consider one of the most serious objections to this mode of treating piles." I should very much like to know how or by what means he expected the tumor to disappear.

When sloughing is limited to the tumor which is deadened by the injection of a proper fluid, no danger to the patient can exist, neither will it cause any inconvenience, but

if the sloughing involves the bowel, the fluid was either improperly injected or the proper fluid was not used. Possibly from inexperience he lacked the proper skill necessary to inject the fluid properly, and as he was probably seeking evidence to condemn the treatment, he used a solution of only 16% of carbolic acid strength; too weak to cauterize and prevent absorption, and a great deal weaker than is used by the successful practitioners using this method. It is more than passing strange that a man, generally well informed, should attempt to instruct others in a subject concerning the principles of which he is comparatively ignorant. In a review of the comments of prominent physicians who are opposed to the non-surgical treatment of the rectum, notably the injection treatment of hemorrhoids, the following objections seem to be the most general:

1. Danger. Andrews of Chicago has reported a number of deaths due to the sequences following the injection of certain fluids into hemorrhoids, but he fails to state the number of persons who have died from the effects of surgical operations for the relief of similar conditions; neither did he employ a fluid such as is now considered the only rational and proper one to inject into hemorrhoidal tumors. The indiscriminate injection of irritating fluids has never received the sanction of the successful physicians using this method, and carelessness in injecting, so often combined with the use of an improper fluid, cannot be expected to produce satisfactory results. The use of a suitable fluid, properly injected, is uniformly curative and is as free from danger and serious consequences as the lancing of a felon or the extraction of a tooth.

2. It is not uniformly curative. This objection would be a poor one if it were true, but it is not true. With the exception of cutaneous external hemorrhoids the treatment is absolutely curative, if the proper fluid is employed and carefully injected. The surgical operation for hemorrhoids is not only not uniformly curative, but in many cases the results of the operation are far worse than the original condition.

3. It is a tedious treatment. This objection is not well taken. Patients prefer mild means to severe ones and if a choice were offered them, the large majority would prefer a slow but certain cure to a speedy operation of which the outcome is uncertain.

4. It is not applicable to all piles. This is true. No one ever claimed that all external piles should be injected. The injection treatment is principally a form of treatment for internal piles, and as such it is a decided success.

On the other hand, prominent advocates of this method have this to say against the ligature, clamp and cautery, and the knife.

Dr. S. S. Turner, U. S. Army, says: "Mr. Whitehead's operation is so self-evidently bloody, tedious and difficult that no general practitioner and few specialists will care to undertake it. No amount of assertion by Mr. Whitehead in favor of its simplicity, will deceive any one who has studied anatomy."

Allingham says of the clamp and cautery, "In my opinion it has little to recommend it. As far as my most careful researches have led me to a conclusion, it is quite six times as fatal as the ligature properly and dextrously applied."

Dr. Haynes says of the ligature, "I have frequently made Allingham's ligature operation. It is easy and effectual, but followed by retention of urine and great pain, lasting in some cases seven days. One of my cases died from lock-jaw and a similar result followed a case in the Episcopal Hospital in Philadelphia."

Dr. J. W. Hallum, in an article in a leading medical journal, says: "The treatment of hemorrhoids by carbolic acid injection is a method that I hesitate to present and advocate, not because of its defects, but on account of its opponents." He further says that in ten years' practice of the method, he has never had any alarming symptoms, no secondary hemorrhage and no sloughing other than the pile itself, and without a single failure.

The honor of being the originator of the injection method of treating hemorrhoids has been accorded to Colles of Dublin, who first employed the method in 1874, although he was closely followed by Sturgeon of this country, who practiced the same method the same year.

Agnew of San Francisco reported cures by this method as early as 1877, and has been employing it with success ever since.

Numerous others could be mentioned who have practiced the method for over twenty years.

Those of the profession who imagine that this mode of treating hemorrhoids is still in a crude and imperfect state, and that the perhaps unsatisfactory results obtained by a few isolated and inexperienced practitioners are a criterion by which the value of the treatment is measured, are laboring under a delusion and existing in a state of lethargy from which they cannot emerge too quickly.

The close relationship existing between different forms of diseases of the rectum and anus, many of which resemble each other so closely that the differential diagnosis is not always easy, and as the treatment of one disease often necessitates the treatment of others, those coming within the scope of this work will be considered. Those of a malignant nature will be omitted.

The diseases of the rectum and anus which can be successfully treated by the general practitioner may be said to be, Hemorrhoids, Rectal Ulcers, Rectal and Anal Fissure, Rectal and Anal Fistula, Rectal Polypus and Prolapse of the Rectum. In connection with these may be included the treatment of Pruritus, Eczema and Constipation.

Each of these will receive attention in their order, special attention being given to diagnosis and treatment. Works on anatomy are at the disposal of all practitioners, and a lengthy anatomical description of the rectum and a histological and pathological study of its structure in health and disease could serve no purpose in a work of this nature.

Enough of this will, however, be given to place the subject clearly before the reader. A complete and exhaustive study of the anatomy of the parts will amply repay the practitioner for the time and labor so spent.

Hemorrhoids.

Hemorrhoids are usually defined as tumors largely composed of varicose or dilated veins of the lower part of the rectum, surrounded and infiltrated by connective tissue. This is correct with the exception that the arteries may be also involved. Hemorrhoids are divided into two general classes, Internal and External. This classification has an anatomical and pathological basis and serves as a guide to treatment. Internal hemorrhoids originate and have their attachments above the external sphincter and are within the grasp of this muscle. External hemorrhoids have their origin in the anal membrane or at the muco-cutaneous junction, and when the sphincter is closed, are external to it. Internal hemorrhoids when of sufficient size, protrude through the sphincter during straining, but they may be returned into the bowel, where they will remain until again forced down. External hemorrhoids cannot be forced into the bowel, but remain constantly on the outside. It is as a rule not difficult to make a diagnosis between internal and external piles, but it is important that it should be correctly made, as the treatment of the two forms is essentially different.

Internal hemorrhoids are subdivided into three varieties and are named according to their character, the Venous, Capillary and Arterial. Different writers have mentioned many other varieties, named according to their shape and characteristics, but it is unnecessary to mention them as their treatment is practically the same.

External hemorrhoids are divided into two classes, the Venous and Cutaneous. The former are again subdivided into the varicose and the thrombic. The Cutaneous are also again divided into the redundant, the hyperplastic and the hypertrophic.

Mixed hemorrhoids may also exist, partly within the sphincter and partly without.

The rectum receives its blood supply from the superior, middle and inferior hemorrhoidal arteries. The superior hemorrhoidal is a continuation of the inferior mesenteric, and by a number of branches descends between the mucous and muscular coats of the rectum nearly as far as its lower end, anastomosing with each other, with the middle and the inferior hemorrhoidal arteries. The middle hemorrhoidal artery is a branch of the anterior trunk of the internal iliac and supplies the lower part of the rectum, anastomosing with the others. The inferior hemorrhoidal arteries are two or three in number, arising from the internal pudic. They supply the sphincters and integument of the anal region.

The veins of the rectum are the superior, middle and inferior hemorrhoidal. The superior veins which are alone implicated in the formation of internal hemorrhoids, are tributaries of the inferior mesenteric, while the middle and inferior veins are alone implicated in the formation of external hemorrhoids, are tributaries of the internal iliac. There is free anastomosis between the internal and external venous systems, being known as the hemorrhoidal plexus. The inferior mesenteric forms part of the vena portae and the blood is thus circulated through the liver. This illustrates the connection with internal hemorrhoids and interference with the portal circulation, as any obstruction in the latter

would necessarily be responsible for greater pressure in the hemorrhoidal veins. This is illustrated in the common occurrence of persons experiencing more inconvenience from their piles when bilious. As the external venous system empties into the internal iliac, the interruption or obstruction of the portal system does not influence external piles, except to such an extent as may be due to the anastomosis between the two systems, as this blood passes through the common iliacs and inferior vena cava to the heart.

Internal piles are covered by mucous membrane only, which is usually thickened and changed in color and consistence, according to the length of time they have existed, and the variety to which they belong.

Those of Venous origin are by far the most common. They may assume almost any shape and size and are bluish in appearance unless when strangulated, when they may assume a purplish hue. These tumors may be small, round, soft, spongy and smooth or may take the form of a large corrugated mass filling the entire lower portion of the rectum. They are not painful unless when inflamed and strangulated, do not bleed easily, but when existing in large numbers or when a number have coalesced, a movement of the bowels may cause quite profuse hemorrhage.

Hemorrhoids of Capillary origin are usually of a dark color, are smaller than the venous, more delicate, bleed easily when touched by a probe and are not painful. They seldom protrude unless when accompanied by large tumors.

Arterial hemorrhoids are bright red in appearance, very irritable, bleed freely, are of delicate structure when they first make their appearance and are subject to prolapse.

External piles. The varicose form of external piles is a varicosed condition of the external hemorrhoidal veins, with or without infiltration and thickening of the surrounding tissue. It is usually of a bluish or purplish tint, smooth or corrugated, even or irregular. The thrombic pile is due to a thrombus in the external hemorrhoidal veins, is hard and tense, painful and liable to inflammation. The throm-

bus may be absorbed and the tumor disappear or it may develop into a cutaneous tab, mentioned under that variety.

Of the cutaneous variety the redundant form is common in those having internal piles and are often caused by a weakening of the sphincter, allowing the anal edges to prolapse.

The hyperplastic form is due to hyperplasia of the connective tissue from abrasions, fissure or ulceration.

The hypertrophic form is a hypertrophy of the normal radiating folds of the anus, the result of an eczematous inflammation or the remnant of one of the forms of venous piles that has undergone spontaneous cure.

RECTAL EXAMINATIONS AND TREATMENT.

As a rule, all persons with rectal trouble imagine they have piles, and the majority of physicians accept the patient's diagnosis of the ailment without an examination. A palliative ointment is prescribed and the patient receiving no benefit, consults the first itinerant "pile doctor" that comes within reach and is promptly cured. At the next meeting of the medical society the question of how to eliminate the quack will be discussed, but no definite conclusion will be reached.

When a person with rectal disease consults the physician, he should be allowed to give his own account of the trouble as he understands it, after which the physician will proceed to make inquiries regarding points not mentioned by the patient. The principle points to be determined are, the length of time the disease has existed, whether there is pain or itching, discharge of blood, feces or mucus, condition of the bowels, whether there is protrusion at one or both sides of the anus during the act of defecation and whether the protrusion can be replaced with or without difficulty.

If from the outline given by the patient there is reason to suspect the presence of hemorrhoids, or other rectal dis-

ease, an examination should be made. This will but seldom be objected to by male patients, but females sometimes seriously object. To such it is by far the better plan to say, "Unless you will permit an examination to be made, I must refuse to accept your case for treatment. Unless I can treat you intelligently and correctly, I prefer not to treat you at all. A failure to effect a cure in your case would incur a useless expense on your part and compromise my professional reputation," or something along that line. Such a statement will at once convince the patient that you are conscientious and do not wish to treat her simply in order to obtain the fee that would result, and but rarely fails to cause her objections to be laid aside. Occasionally a female patient will wish time to consider so grave a matter as to submit to an ocular examination, and if so she should not be interfered with. In the large majority of cases she will return before you expect her.

The digital examination is at best but a poor excuse for the ocular. After much experience the touch can be educated to distinguish piles from polypi and ulcers from catarrh of the rectum, but to the beginner in this work, nothing short of an ocular examination should be countenanced. It will be far better to begin the treatment of this class of diseases with perfect cures in a few cases, than many imperfect ones.

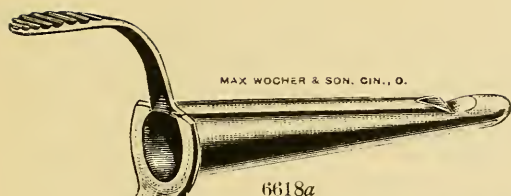
For the purpose of making thorough examinations, a table thirty-four to thirty-six inches high is preferable to a surgical chair, the latter being too low for comfortable work. The top should be padded or covered with blankets. Fully as important as the table may be, none the less so is a good light.

No artificial light equals that of the sun radiated through a frosted glass or a clear pane shaded by a thin white curtain. In cities and towns where gas can be obtained an excellent light can be secured by means of the incandescent mantles now so generally used. In the country where gas or electric lights are not in use a light in every particular as bright

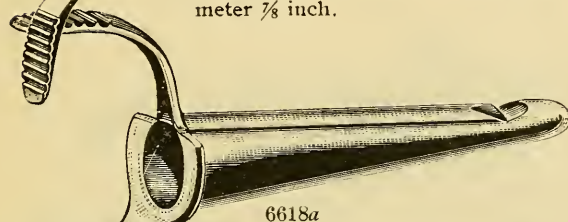
can be obtained from gasoline, consumed in a mantle of similar construction as those used for the regular illuminating gas.

An ordinary reflector properly located will aid materially in concentrating the light. The small pocket electric light is a neat and convenient affair and can be used to great advantage in rectal examinations. If the patient has stated that protrusion occurs, he should be directed to go to the closet and make an effort to strain it down. If unsuccessful, a sufficient quantity of water should be thrown into the rectum to produce an action, or the usual time at which the patient's bowels move may be selected for the examination. The advantage of this procedure is that if the trouble is prolapse of the rectum it can at once be determined, and if piles, their location can easily be ascertained and noted for future reference. For examination the patient is placed on one side, the knees drawn up or extended on a wing attached to the lower end of the table. A general view of the anus is taken and any abnormalities noted. Before an internal examination is made, the protrusion must be returned and the parts well oiled for the introduction of the speculum. If an injection of water was not given for the purpose of causing a protrusion, it is well to do this as it will wash away the mucus and retained feces. This is also a good plan when a disease other than piles exists when there is no protrusion, except when ulcer is suspected, as in the latter case the presence and location of mucus is of diagnostic value. While some writers advocate the examination and treatment of hemorrhoids without the use of the speculum, no good reasons for this method exist. The use of the speculum is not difficult nor painful to the patient, and its aid cannot be over-estimated.

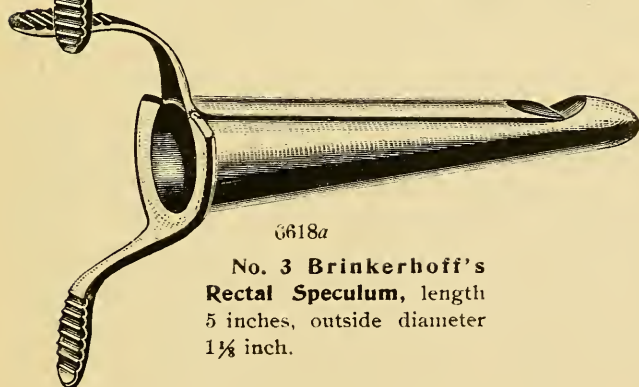
In the selection of the speculum considerable judgment should be exercised. The ordinary bi-valve speculum is not as satisfactory as several others in the market. Whatever else may be said of the methods of Brinkerhoff, it is beyond all doubt true that he devised the best speculum that exists



No. 1 Brinkerhoff's Rectal Speculum, length 4 inches, outside diameter $\frac{7}{8}$ inch.



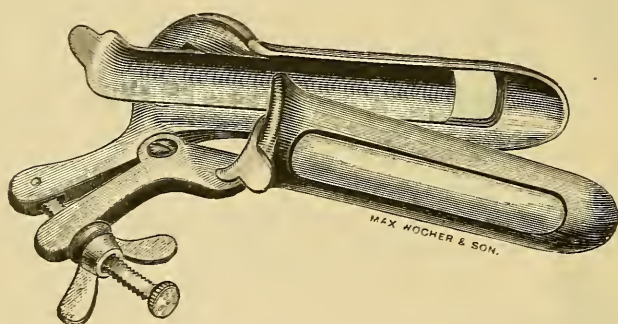
No. 2 Brinkerhoff's Rectal Speculum, length 4 inches, outside diameter 1 inch.



No. 3 Brinkerhoff's Rectal Speculum, length 5 inches, outside diameter $1\frac{1}{8}$ inch.

to-day. One of its best features is the reflecting end, inclined inward, which reflects a splendid light on the rectal membrane as the slide is withdrawn. The accompanying cut will illustrate its appearance and design. Next to the Brinker-

hoff speculum, the O'Neil is probably the best, and indeed it has features superior to the former, the principal one being the expansion of the distal end of the speculum in the rectum. Its reflecting powers are not quite as good as those of the Brinkerhoff, but it enables a larger view of the rectum being taken at one introduction. No speculum with which I am acquainted is superior to either of these. Several sizes should be carried, a small and medium size being the most used.



THE O'NEIL SPECULUM.

With a small and medium size Brinkerhoff and a medium size O'Neil, all work can be done. The patient being placed in a position so that the light will be thrown into the rectum, the speculum is oiled and introduced. Olive oil is usually recommended for this purpose, but its smell is so disagreeable after a short exposure to the air that it is better to use one of the hydro-carbon oils, liquid petrolatum or vaseline. A small quantity of oil is also introduced just within the rectum. Introduce the speculum slowly, giving the muscles time to relax, bearing in mind that all movements about the rectum must be easy and gentle to prevent spasmodic contraction of the sphincter. Never use a cold speculum. After the instrument has been introduced its entire length, the slide is gradually withdrawn and an inspection made of the

membrane protruding through the opening. When the slide is withdrawn no effort should be made to return it, but the speculum must be withdrawn and the slide then replaced and again introduced, turning the speculum slightly so as to expose another portion of the bowel. From three to four introductions are required to view the entire interior of the rectum. The patient should be instructed to bear down occasionally during the examination so as to distend the parts and fill up the capillaries or veins. The examination having revealed the condition of affairs, treatment will be instituted accordingly, as hereafter detailed.

In the light of our present positive knowledge, begotten by personal and the accumulated experience of many specialists, it is not presumptive to make the statement that in any and every case of true hemorrhoids, a cure can be effected without in the least endangering the life of the patient or without the resort to a painful surgical operation.

The popular dread of surgical operations is well known, and indeed there are sufficient reasons for it, and any other means by which we can safely obtain the same end is appreciated and gratefully accepted by the general public. Persons afflicted with hemorrhoids will readily submit to the injection treatment if assured that the treatment is safe, practically painless and curative. This we can guarantee. The advocates of the injection method are divided on the subject of the advisability of injecting External piles, although the treatment is recommended by no less an authority than Agnew, but condemned by the majority of others. The injection of the external venous pile is without doubt admissible, but this treatment in the cutaneous form, for the removal of the skinny tabs, is useless. More will be said of this under the treatment of external piles. For internal piles of all varieties, the injection treatment is universally applicable. The diagnosis of the different varieties, while desirable from a technical point of view, is of little or no advantage when it comes to treatment. A sufficient classification as far as pertains to the treatment is that

which differentiates the internal from the external, and the venous from the cutaneous external piles.

Patients will frequently consult a physician in regard to hemorrhoids when they are in a state of strangulation or inflammation, after several days of unsuccessful attempts to relieve this condition. If the ordinary efforts at reduction fail, place the patient in the knee-chest position, allowing the intestines to gravitate toward the chest. The protruded and inflamed mass is now covered with a pledget of cotton wet with a 10% solution of cocaine which is held in place for a few minutes. Vaseline is now applied to the piles and one finger inserted into the rectum. With the other hand gently press on each tumor in succession and empty them of their blood, returning them into the rectum as rapidly as emptied. If this method is not successful hot water injections may be given and the process repeated. The cases that resist this method of reduction are very rare. The injection treatment must never be employed when piles are in a state of inflammation, but palliative measures must be instituted to reduce the congestion. For this purpose hot douches, hot sitz baths, soothing ointments, such as are hereafter mentioned, or injections of distilled extract of witch hazel are employed. When piles are very large, a similar preparatory treatment will lessen the tendency to local congestion after treatment. The patient should have the bowels evacuated before the treatment, so that no movement will occur for a day or two afterward. A laxative of cascara sagrada, senna, or other gentle aperients may be employed. If there is but little tendency to constipation, laxatives are not necessary, as an easy movement does not interfere with the injected piles. The injections are made with the ordinary hypodermatic syringe with a set screw on the piston by which the amount injected can be regulated. The needle should be three or four inches long, gold pointed preferred, and supplied with a sheath by which the point can be exposed sufficiently to enter the pile and not pass through it. A difference of opinion exists between practitioners using the

injection method for treating piles as to whether injections should be made into them while protruded, without the use of the speculum, or using the speculum, inject them inside of the rectum. Each method has its advocates whose claims are well supported, but in so far as my experience teaches, the internal method is to be preferred.

Carbolic acid, in various strengths and different combinations, has been proven to be the most satisfactory agent for the purpose of curing piles by the injection method. A common error in preparing solutions for this purpose is that the carbolic acid is used in too weak a solution. Although prominent and successful operators employ carbolic acid in ten to twenty per cent. solution, and claim to cure a large percentage of cases, it has been demonstrated beyond question that better results are obtained when it is used in fifty or more per cent. solution.

Dilute carbolic acid is painful, is not cauterant, and does not cause sufficient sloughing to remove the tumor. When used in fifty to sixty-five per cent. solution its action is anesthetic and cauterant, and the slough produced will be sufficient to eradicate the tumor entirely. The much harped theory of a clot forming and passing along the veins to the heart is not possible when fifty per cent, or stronger solution is used, as such a fluid at once coagulates the blood and immediately stops the circulation in the part. When the object of all injections is to cause coagulum formation and devitalization of the parts, so that a slough will result, it seems poor practice to inject just enough to cause a few clots and set up a severe inflammation. The occasional bad results that are reported as arguing against the injection method, would, if investigated, be found to have been produced by using one of these weak solutions which only tantalize a pile tumor and often incapacitate the patient. Carbolic acid in weak solutions is painful and dangerous, and in addition to the local effects, may be absorbed and cause toxic symptoms, but in strong solutions it is non-absorbable.

promptly coagulates blood and serum, acts as its own anesthetic and is perfectly safe.

It is safe to say that one-half of the medical profession is not thoroughly acquainted with this feature of carbolic acid. Fearing to use carbolic acid in a strong solution, they employ one that is but little more than carbolized water, and by so doing they invite the very effect that they seek to avoid.

In this connection extracts from writers on this point will be quoted which should convince any physician of the absolutely reliable agent we have in carbolic acid, used in strong solution.

Dr. Agnew says: "I have always maintained that there is absolutely no danger of carbolic acid poisoning from the local use of strong solutions, and I am borne out in my belief both by reason and experience. In strength of fifty per cent. up, carbolic acid will cauterize the tissue of hemorrhoids as effectually as the hot iron, and will strangulate the circulation at once. It coagulates albumen instantly and spends its force and exhausts itself right there and then, leaving none to be absorbed. Strong solutions also guard against embolism by forming a tough, compact and insoluble coagulum; the coagulum being strengthened and its component parts closely bound together into one solid, conglomerate mass by the fibrous tissue forming the network of a hemorrhoidal tumor. A weak, thin watery solution, aside from doing poor work, is much more liable to diffuse itself and be carried into the circulation like a hypodermic of morphia, than a solution sufficiently strong to act as a cauterant, by which the tissue is destroyed, a tough, compact and an insoluble coagulum is formed, and the circulation strangulated at once."

Dr. Dorland, of Chicago, says: "When a compact coagulum is formed and the muscular structure of the bowel is not touched by the styptic, it is impossible to do harm, all the learned theory to the contrary notwithstanding. A weak solution forms little globules in a tumor and we can imagine one so small as to be carried into the circulation."

Dr. Haynes of Los Angeles, Cal., treated fifteen cases

of hemorrhoids, ranging from a mild to a severe type, with weak solutions of carbolic acid, with anything but satisfactory results. Five cases were treated with five minim injections of a two per cent. solution at intervals of ten days. The pain was intolerable and crural phlebitis occurred in one case which confined the patient two months. In the remaining ten cases five minims of a five per cent. solution were employed with better satisfaction, but there was more or less pain and partial failure to cure. The fifteenth case was treated thus until but two small but annoying tumors remained. These were constricted at their base by the wire of a nasal snare, and pure carbolic acid, crystals liquefied by heat, was injected into each tumor until each turned white. He announced as the result of this treatment that the case was cured with but slight inconvenience, and that two other cases similarly treated were equally satisfactory.

Dr. Hoyt of New York, says: "There is not a hemorrhoidal case possible which cannot be obliterated by this means, and I am at a loss to explain why so many cling to methods that carry so much havoc and suffering. If every college in the land would have this subject demonstrated by men of experience and learning, all other methods would soon lose recognition."

Dr. Howard Crutcher, of Chicago, has treated eight hemorrhoidal tumors at one time, using one hundred and sixty drops of pure carbolic acid, with the results of total obliteration of the tumors without the slightest unfavorable symptom.

The complete strangulation of the circulation renders inflammation of the tumor impossible, as inflammation cannot occur in tissue where there is no circulation, and the solidity of the coagulum renders the liability to embolism exceedingly remote. Accidents and complications may occasionally occur, but these occur in the practice of every physician, no matter what method he employs. Used intelligently and properly, carbolic acid injections will cure more cases of hemorrhoids with less inconvenience to the patient,

than any other method with which we are at present acquainted.

Dr. Hoyt of New York, in a recently published article sums up the comparative advantages of this method as follows:

"A large number of persons adopt these ideas that would never subject themselves to other methods.

"As the surface of a hemorrhoidal tumor is never broken, there is no such thing as post-operative hemorrhage.

"A skillful application of this system leaves pain out of the experience of patients and they can attend to their usual affairs.

"A case thoroughly restored is permanent; but if it had to be treated every year, the advantages would still exist.

"Any substance injected into animal tissue travels in the direction of the least resistance; hence in these matters it does not invade deeper relations to their detriment.

"The general health improves from the first day, and so the patient is not sick a long time after he gets well.

"The greatest advantage of this interstitial invasion, as a means of destroying hemorrhoids, is that there are no disadvantages."

HEMORRHOIDAL INJECTION FLUIDS.

As formulae for the injection of hemorrhoids the following are rational in composition and satisfactory in action. Other popular combinations are mentioned at the close of this chapter.

The following combination is the one I most frequently employ. It fills every requirement and will produce results that cannot be excelled by any other formulae, for the simple reason that it obliterates the hemorrhoids effectively with as little disturbance as is possible with any other. I have used other combinations which are just as good, Agnew's for instance, yet I see no reason why I should prefer it to this one.

R Carbolic Acid—Pure..... fl. 5 ij-ijj.
Purified Sperm Oil..... fl. 3 ij.

Mix. Sig. Inject sufficient into each tumor to change its appearance to grayish or white.

The quantity required depends entirely upon the size of the tumor. In small tumors, where three minims only are required, the stronger solution may be used, while in large tumors, where sometimes two to four drachms are required, the fifty per cent. solution may be used. This formula is equal to the best.

When carbolic acid is mentioned, I refer to the pure crystalized article, which for the purpose of forming solutions is liquefied by heat, without the addition of either water or glycerine. I formerly used Calvert's acid, but I have since learned that the American chemist can produce an acid in every particular the equal of the English product, and at a cost almost seventy-five per cent. less. I use either Merck's dry crystals or Mallinckrodt's best grade acid.

Olive oil, sweet almond oil or glycerine may be used as a diluent, but the sperm oil is I think preferable to a vegetable oil. Glycerine is not so desirable on account of its hygroscopic character. There is apparently more liability to pain and tenderness when glycerine is used, due probably to a certain degree of engorgement caused by its attraction of moisture from the surrounding parts. The glycerine is also not absorbed as readily as the oils and thereby produces a larger sloughing area.

The liquid petrolatums, vaselines and the other hydrocarbon oils are not miscible with carbolic acid.

Dr. Agnew's solution is one which produces very satisfactory results. It combines with carbolic acid, acetate of lead, borax and glycerine. The coagulating action of the acid is undoubtedly augmented by the addition of the acetate of lead. The formulae for making this fluid are:

℞ Acetate of Lead,
 Biborate of Soda..... āā 5 ij.
 Glycerine, Price's..... fl. 3 j.

Mix in a graduate and pour into a two ounce vial, and let stand for twenty-four hours. The solution of the salts is hastened by placing the vial in a warm water bath and letting it remain there for fifteen or twenty minutes. The glycerine can be better handled and its measurements more accurately made by warming it and also the graduate.

This solution having been made, the fluid can be compounded.

℞ Acid Carbohc, liq. cryst..... fl. 3 j.
 Distilled Water..... fl. 3 ij.
 Glycerite of Lead and Borax..... fl. 3 vj.

Mix. Sig. Solution for hemorrhoids.

The object of the water in the formula is to lessen the syrupy consistence of the fluid. Without the water it is rather heavy for hypodermatic injection, as it does not pass through the needles freely. Dr. Agnew says of this combination: "The addition of the acetate of lead is designed to restrict the action, and that of the borax to lessen the irritating properties of the acid. The acetate of lead not only keeps within limits the distribution of the acid at the time the solution is forced out of the syringe, but of itself combines with a certain portion of the albumen of the blood and tissues, forming the albuminate of lead." He further says that he has experimented with carbohc acid in different strengths and if he were to change his formula it would be toward an increase, rather than a diminution of the quantity of the acid. This fluid also turns pile tumors grayish or white, and must be used in sufficient quantity to produce this change. Piles of a delicate texture and covering, undergo change of color more quickly and to a greater degree than those more fibrous and tougher in character.

INJECTING THE FLUID.

After an examination has been made and the location of the piles discovered, the patient should lie on the side opposite to that to which the piles are attached, and the speculum introduced so that the tumor will protrude downward through the fenestrum when the slide is withdrawn. (The Brinkerhoff speculum is referred to.) In this position the fluid injected will gravitate toward the apex of the now pendant pile, and will not so easily permeate the structures underlying its base, neither will any damage be done by overflow of the fluid on the mucous membrane, as in case of an overflow it will be caught in the speculum. An overflow will not occur when the injection is properly made and the needle not withdrawn too quickly. After the tumor has been exposed, ask the patient to bear down and introduce the needle with a quick thrust. There is in many cases no pain whatever connected with the introduction of the needle, patients frequently not knowing that the needle has been inserted, and the use of cocaine before injecting is entirely unnecessary. The needle should be inserted about midway between the apex and the middle of the tumor and the fluid injected a minim at a time, watching for the change of color before mentioned. Large tumors cannot be thoroughly injected by one insertion of the needle, on account of the coagulum formation about the needle, and as many more injections must be made as are required to permeate the entire tumor.

Keep the needle in place for a few minutes after sufficient fluid has been injected, and withdraw carefully. If blood follows its withdrawal, enough fluid has not been injected and the needle should be re-inserted and more injected. Large tumors are frequently divided into separate cavities, probably through anastomosis of veins, and in these cases the entire tumor cannot be permeated by one injection.

The injection of the fluid is attended with but little pain, and is only momentary. If a great deal of pain is complained of, the deeper tissues are probably being invaded. The powerful anesthetic action of carbolic acid compounds of this strength quickly deaden all sensibility. After the needle has been removed, the tumor may be smeared with vaseline and the speculum removed. The pain which sometimes follows an injection, will appear within four hours, if it appears at all. Persons with piles usually do not seek relief until they have suffered the most excruciating pain, consequently a little pain, such as sometimes follows injection, is usually not complained of, except in nervous or irritable persons whose slightest discomfort causes considerable disturbance. To such, an opium suppository may be given for use if required, and hot sitz baths ordered, or if severe, it may be controlled by morphine. Sympathetic paralysis of the bladder or stricture of the urethra sometimes occurs, rarely however, and is only temporary. It may be relieved by hot baths, hot applications to the bladder and perineum or by the catheter. It will subside with that of the inflammation of the rectum. For retention of urine, when the catheter cannot be passed on account of the spasm of the urethra, give one-third grain of pilocarpine every half hour, until complete relaxation takes place and free diaphoresis has been established, or pass the Faradic current through the bladder. If the bowels incline toward a movement, while the first inflammatory effects are present, inject slippery elm water into the rectum, hot, so as to make the passage easy. Usually however, there is so little inflammation that no attention need be paid to the action of the bowels, particularly as an evacuation usually precedes the treatment, to which reference has been made. In cases where the tumors injected have been very large, the patient should refrain from active exercise for a few days, but in small and medium sized tumors this injunction need not be given. It is best not to inject more than two small or medium, or one large sized tumor at one treatment, and ten days to two weeks

should elapse between treatments. Small tumors should be treated first as after the large ones have been removed, the small ones are difficult to locate. Agnew recommends the treatment of a number of tumors at one treatment, and while it may be safe and proper practice, there are several reasons against this procedure. Physicians may be guided as their experience dictates in this matter.

Ninety-five per cent. of cases require no attention whatever after the treatment, and can follow their usual vocation. In the remainder, minor complications may occur, some of which have already been referred to. Secondary hemorrhage but rarely occurs, and can usually be checked by the introduction into the rectum, against the bleeding surface, of several pieces of ammonio-ferric alum, and kept in place by compression obtained by plugging the rectum with cotton. The other usual methods of controlling hemorrhage, the hemostatic forceps, the ligature or torsion may be employed.

Extensive ulceration and sloughing will not occur unless when the deeper tissues have been invaded by the fluid. This will not occur if the injection is made with the tumor in a pendant position, as before directed. If the ulceration should show indisposition to heal, the usual treatment for ulceration of the rectum may be employed.

The complications referred to will only occur in rare cases, and are no excuse whatever for a condemnation of the method. If all other treatments were safe, the objections might be sustained, but the contrary being more applicable to other forms of treatment, no reasonable arguments can be offered against the adoption of this eligible method of treating hemorrhoids.

Having noticed previously, the employment of weaker solutions of carbolic acid by successful specialists in this work, a few formulae, with comments by their advocates, will follow. While not for a moment, questioning the statements of these men, nor wishing to detract from whatever influence their conclusions may have upon those who follow their example, I cannot but endeavor to impress the thought

that whatever good results may be obtained by the use of carbolic acid in weak solutions, they are but a forétaste of the brilliant achievements attainable by the use of the strong solutions. Advocates of weak solutions, less than thirty-five per cent. are on the right track, although somewhat hampered by their views in this matter, but I have infinitely more admiration for them than for the hide-bound individuals who condemn the method without investigation of its merits and who base their opinions on the results following its application by the ignorant non-graduate itinerant "pile doctor," instead of those attained by intelligent, educated and successful practitioners. While the bulk of the profession is condemning the treatment, those of it who have been progressive enough to enter upon it, will continue to prosper. "The harvest is plenty, but the laborers are few."

Dr. Monroe, of Louisville, uses

R̄ Carbolic Acid, pure..... fl. 3 j.
Olive Oil..... fl. 3 iij.

Mix by putting bottle in hot water.

Sig. Inject into tumors a sufficient quantity to turn them white. Several days before operating, he advises the use of calomel and soda for action upon the liver. This should be followed by one or two seidlitz powders. One hour before operating, the patient should use an injection of one pint of warm water in which a teaspoonful of boracic acid has been dissolved.

Dr. R. D. Mason of Omaha, uses Carbolic Acid in 50% solution, with glycerine and water, and also reports good results from the use of the formula of Dr. Agnew.

He recommends the following formula also, but to compound it properly, some skill is required.

R	Napthaline	5 ij.
	Acid Carbolic.....	fl. 5 ij.
	Hydrastine Mur.....	grs. iiij.
	Morphine Sulph.....	grs. vj.
	Acid Tannic.....	grs. xv.
	Fl. Ext. Ergot.....	fl. 5 iv.

Mix. Dissolve the naphthaline in ether before mixing with the other ingredients.

Sig. Inject one or two drops into each tumor at first, and gradually increase to six or eight drops as required.

Dr. Eliot, of Washington, D. C., recommends the following:

R	Acid Carbolic, 95%.....	fl. 5 ij.
	Fld. Ext. Ergot.....	fl. 5 ij.

Mix. Sig. Inject according to size of tumor.

Dr. Shuford's Formula.

R	Sodium Biborate.....	5 j.
	Acid Salicylic.....	5 j.
	Acid Carbolic.....	fl. 5 iiij.
	Glycerine	fl. 3 j.

Mix. Sig. Inject three to five drops in small, and eight to ten or more in large ones.

Dr. Shuford claims for this formula, that it is comparatively painless, causes no accidents and is eminently successful. The hypertrophy disappears and is thrown off, leaving a smooth, healthy mucous surface.

Overall's Formula.

R	Acid Carbolic,	
	Glycerine,	
	Fl. Ext. Ergot.....	āā p. e.

Mix. Sig. Inject three to eight drops.

Dr. Hoyt recommends,

℞ Acid Carbolic..... ℥ lxxx.
 Ext. Hamamelis, Distilled.
 Distilled Water..... āā fl. 5 vj.

Mix. Sig. Inject sufficient to produce a paleness of the surface of the pile, injecting the fluid a drop at a time.

Rorick's Formula.

℞ Acid Carbolic..... fl. 3 ij.
 Glycerine fl. 3 ij.
 Fld. Ext. Ergot..... fl. 3 j.
 Distilled water..... fl. 3 iss.

Mix. Sig. Inject from two to ten drops, according to size of tumor.

The following is given by Mason, stating that he received it from one who paid fifty dollars for it.

℞ Carbolic Acid..... fl. 5 iv.
 Acetate of Lead..... 3 j.
 Salicylic Acid..... gr. xxx.
 Cocaine Mur..... gr. x.
 Aqua Dest,
 Glycerine āā q. s. ft. fl. 3 j.

Sig. Use in same manner as other compounds.

External Hemorrhoids.

This variety of piles is not difficult to recognize. They appear at the verge of the anus, either as a dark blue, or purplish venous tumor, or as a cutaneous excrescence or skinny tab. Venous piles are very often of an irritable nature and cause the patient considerable inconvenience. They are also subject to inflammation. They vary in size from that of a pea, to that of an olive, and may number from one to four or more. The cutaneous excrescences are usually the remnant of a venous tumor, which has undergone spontaneous cure. External piles are a frequent source of considerable itching.

In regard to injecting external venous piles, a difference of opinion still exists. At best, it can only reasonably apply to the treatment of recently formed venous tumors, as they soon become fibrous and contain a clot. Dr. Agnew advises the injection of this variety, the treatment being applied after the manner of treating internal piles. Of the treatment he says: "Notwithstanding the small amount of cutting required in the removal of an external hemorrhoid by excision, there are some who are decidedly averse to being treated by any plan involving the use of the knife or scissors. Patients will readily submit to this treatment, although informed that a longer time is required for the complete eradication of a tumor thus treated, and that more pain and inconvenience may be experienced from the effects of the operation than would be from that by excision. This treatment has the disadvantage that it does not instantly remove the tumor as does excision, but has the advantage of being a bloodless operation." Replying to objections to the treatment given by Dr. Matthews, he says, "The reasons given by Dr. Matthews for his disapproval of the treatment of external hemorrhoids by injection, are concentrated in the statements that 'the inflammation excited would be great, the

pain intense and ulceration might possibly follow." These statements, as I have demonstrated time and again, are certainly not borne out by experience, and are to me, therefore of a purely chimerical character. I have never seen anything more than ordinary swelling follow an injection, a limited amount of controllable pain, and a rapid healing of the broken surface, though not as rapid as that after a removal by excision."

After injection of external venous hemorrhoids, three or four days are required for the removal of the tumor, and patients thus treated should be directed to take but little exercise until the coagulum has been thrown off. The covering of external hemorrhoids is more dense and fibrous than that of the internal, and after the coagulum separates it is sometimes advisable to trim off the ragged edges left, with a scissors. If the injection seems more painful at the first contact of the solution, or when tumors are exceptionally tender, the skin may be injected with a 10% cocaine solution, and as anesthesia is produced the interior of the tumor may be reached and immediately anesthetized. Follow this immediately with the injection of the hemorrhoidal fluid and no fear of cocaine absorption need be felt, as the carbolic acid will so coagulate the contents of the tumor that circulation is impossible. The tumor should be injected thoroughly, following same directions as detailed under internal treatment, although the speculum need not be used, in fact it could not be used. The summit of the tumor should be slightly opened after injection, so that the clot will have an easy egress. This simple procedure will prevent much of the attending discomfort.

The injection of hard fibrous masses, or cutaneous tabs is not to be considered. It is against all theory of this treatment and in practice condemns itself. Cutaneous tabs are usually nothing but fibrous tissue and skin, contain no clot and are usually not troublesome. Their removal should be accomplished by clipping them off with a scissors after anesthesia of the parts, by the Schleich infiltration method.

Thrombotic tumors, which will be found to be hard and firm, liable to inflammation and painful, should be incised and the clot removed. This operation is simple and under local anesthesia, painless.

A 20% solution of cocaine is applied to the tumor and held in place for ten minutes. This will deaden external sensation and a weaker solution can then be injected, or the Schleich method may be employed and anesthesia of the skin produced. In making these injections, care must be taken to make them into the skin, and not into the tumor. After skin anesthesia has been produced the solution may be thrown in the sub-structure. The formula of the Schleich solution is prepared in tablet form by manufacturing chemists and can readily be obtained, with full directions for use. After anesthesia is complete, with a sharp knife make a vertical incision through the skin and turn out the clot. Syringe out the cavity with Hydrozone,* which thoroughly cleanses the cavity and stops the slight hemorrhage that occurs. Now apply to the cavity, with a camel's hair brush, a solution of equal parts of glycerine and carbolic acid, pack with absorbent cotton and apply a T bandage. After forty-eight hours, remove the dressing, wash cavity again with Hydrozone, dust with boracic acid and dress as before. No further attention is usually required. Preceding a bowel movement, after the operation, give an injection of elm bark water, to insure an easy passage. For the relief of the inflammatory symptoms of external piles, various formulae have been devised. Several are appended. Also a formula for an excellent application to internal hemorrhoids after injection.

*Marchand's Hydrozone is the strongest solution of peroxide of hydrogen on the market, being of 30 vol. strength. Bottles containing it are now corked with an Automatic Safety Valve Stopper, which prevents bursting of bottles and the annoying popping of corks when bottles are opened.

R	Cocaine Muriate.....	gr. xv.
	Ergotin	gr. lx.
	Ichthyol	gr. lxx.
	Calomel	gr. xlv.
	Vaseline,	
	Lanoline	āā 5 iv.

Mix. Sig. For the relief of inflamed and painful venous tumors or tabs. Apply to parts on muslin, keeping in place with bandage.

R	Acid Tannic.....	gr. xv.
	Bismuth Sub. Nit.....	gr. xxv.
	Acid Carbolic	gtt. xij.
	Morphine Sulphate.....	gr. viij.
	Vaseline	q. s. ad. 5 j.

Mix. An excellent application after operation, or where astringent or anodyne treatment is indicated. Useful as a general palliative.

R	Bismuth Sub Nit,	
	Iodoform	āā 5 j.
	Powd. Opium.....	gr. xij.
	Ext. Belladonna.....	gr. iv.
	Ol. Eucalyptus.....	gtt. vj
	Cacao Butter.....	q. s.
	Ft. Suppos. No.....	xij.

The oil disguises the iodoform. Recommended by Agnew for controlling pain after injection. Useful in any internal irritation or inflammation.

- ℞ Rosin,
 Chian Turpentine,
 Mutton Tallow..... āā ̄ j.
 Myrtle Wax..... ̄ ij.
 Olive Oil..... fl. ̄ v.

Mix. Melt together and stir until cold. Useful as an application to ulcers which show indisposition to heal.

- ℞ Calomel ̄ j.
 Powd. Opium ̄ ss.
 Carbonate of Lead..... ̄ ij.
 Oxide of Zinc..... ̄ ij.
 Olive Oil..... ̄ iv.
 Fresh Lard, without salt..... ̄ iv.

Mix. Triturate in mortar until thoroughly mixed. A useful ointment for irritable piles, internal or external.

- ℞ Acid Gallic..... gr. xx.
 Charcoal ̄ j.
 Ext. Witch Hazel..... gr. xxx.
 Ext. Hemlock..... gr. xxx.
 Cacao Butter..... q. s.
 Ft. Suppos. No..... x.

To be inserted into the rectum for bleeding piles, either from the action of the feces or the constant annoying oozing of blood.

All of these formulae are merely palliative, although in some mild cases, permanent relief seems to be obtained. The majority of these are not piles however, but merely an eczematous or pruritic condition, diagnosed as piles by the patient, and not investigated by the physician.

For insertion into the rectum after injection of piles, if large, and there is reason to suspect more than ordinary reaction, the following may be applied to the tumors instead of vaseline, as before recommended.

℞ Bismuth Sub Nitrate..... gr. lx.
 Ichthyol gr. xxx.
 Cacao Butter ̄ iv.

Mix by melting the cacao butter and stirring the ichthyol into it, and triturate the bismuth in a mortar with the mixture and add,

℞ Acid Carbolic..... ̄ ss.
 Simple Cerate..... ̄ iss.
 Benzoinated Lard..... q. s. ad. ̄ iv.

Mix. Sig. Apply before removing speculum, or, introduce by means of a suppositor.



OINTMENT SUPPOSITOR.

Rectal Ulcer.

Ulceration of the rectum is more common than is usually supposed. It is a frequent cause of reflex disturbances which none but a rectal specialist would recognize. Ulcers are found in all parts of the rectum but more commonly in the lower third. It may exist merely as a slight solution of the continuity of the mucous membrane or in any stage of ulceration between that and a deep-seated, tissue destroying, well defined ulcer.

When located high in the rectum, its presence is not noticed by the patient as quickly as when close to the sphincter, where the nerve supply is the greatest. The symptoms of rectal ulcer may conveniently be divided into Direct and Reflex. The direct symptoms are moisture about the anus, more or less itching, inflammation and oedema of the anal tissues, stools streaked with blood and mucus, or followed by a discharge of a scum resembling boiled starch, desire to remain long at stool, tenesmus, inflammation of the rectum, a sense of weight and a dull heavy feeling in the lower part of the rectum.

The reflex symptoms are numerous. The chief of these being a morning diarrhoea. There is usually considerable flatus, and feces pass in small lumps or scybala. The desire for stool is frequently urgently felt immediately on rising in the morning, and subsides after several attempts to evacuate the bowels have been made. This symptom is usually not classed as reflex, but its presence cannot be satisfactorily accounted for under any other premises. Patients who make the statement that an inclination to stool is felt immediately after a cold drink or certain food is taken, should be suspected of having rectal ulcer. Constipation may alternate with diarrhoea, but the latter is present more than two-thirds

of the time. In addition to these symptoms, there may be dizziness, irritability of the bladder, eroticism, emissions, hysteria, nausea or vomiting, pain in the lumbar region, sallow complexion, burning of the soles of the feet, and in females neuralgic pains in the ovaries and womb.

Examination for rectal ulcer is made with the speculum. The ulcer is more frequently found on the posterior surface of the rectum, but often on the anterior. When anterior, the bladder reflex symptoms are more marked. On examination, a well developed rectal ulcer is easily recognized by the ragged edges, sometimes elevated and gristly, with the mucus discharge occupying the space between them. In some cases the ulcer presents a clear cut edge, as though cut with a punch, with a well defined offset toward its floor. If the mucus or scum is wiped off, the ulcerated bottom will be exposed to view. It frequently bleeds and is quite tender. Never instruct patients to take an injection before presenting themselves for an examination for ulcer, as the mucus would thereby be removed. In well marked cases it could be distinguished even if the mucus were removed, but in others, the presence of it assists its location. Rectal ulcer may terminate in a cure, deep tissue infiltration and death, or it may, by cicatricial contraction, cause stricture of the rectum.

TREATMENT.

When seen early, the cure of rectal ulcer is not difficult, but when seen later, after considerable of the mucous membrane has been destroyed, its cure, while usually certain, is quite tedious. The treatment is a combination of home and office treatment. The latter consists of first wiping away the mucus and thoroughly cleansing the ulcer with Hydrozone, applied full strength, or in 50% solution, with a small syringe. The ulcer is now dried and a solution of nitrate of silver, sixty grains to the ounce of distilled water, is applied with a cotton tipped probe. Eight or ten drops may be dropped on the ulcer if preferred, instead of the cotton

application. Alternating with this application, or instead of it, the ulcer may be touched in a similar manner with a solution of carbolic acid in sperm oil, two parts of the former to one part of the latter.

Whenever carbolic acid, or any mixture containing twenty-five or more per cent. of it is applied to mucous surfaces, and in rectal work especially, a solution of equal parts of alcohol and water should be applied to the parts touched with the acid almost immediately afterward to neutralize its effect and limit its action. To allow a strong solution of carbolic acid unlimited action on mucous surfaces or an ulcer would often lead to undesirable results. After having applied the dilute alcohol by means of a cotton swab, the ulcer is again dried and dusted with Special Protonuclein (Reed & Carnrick). This preparation must not be confounded with the Protonuclein which is intended for internal use. It is stronger than the latter and is intended for external use only. Suppositories containing five to ten grains of the Special Protonuclein are also of value and one may be inserted after each office treatment, and once daily by the patient. As the following home treatment is used at night, and the ointments in the morning, the suppository may be inserted about the middle of the day.

Office treatment should be applied twice or three times a week in the first part of the treatment, gradually increasing the intervals between treatments as the case improves.

For home treatment, the following "Ulcer Specific" is used:

R	Ext. Witch Hazel, Distilled.....	fl. ʒ	viss.
	Fl. Ext. Hydrastis, aqueous.....	fl. ʒ	iiss.
	Acid Carbolic.....	℥	xxx.
	Glycerine	fl. ʒ	ix.

Mix. Mix the glycerine with the acid and add the hydrastis. Mix well and add the witch hazel last.

Sig. Mix one-half teaspoonful of this mixture with one-half teaspoonful of corn starch and two tablespoonfuls of warm water. Inject into the rectum with a hard rubber syringe and retain all night. Repeat every night.

If there is occasional bleeding, the following "Ulcer Compound" will give better results:

R Monsell's Solution of Iron..... fl. ̄ iv.
 Glycerine fl. ̄ iv.
 Acid Carbolic..... fl. ̄ ss.
 Ext. Witch Hazel, Distilled..... fl. ̄ j.

Mix. Sig. Use in the same manner as the "Ulcer Specific."

Another good formula for use in ulceration is:

R Fl. Ext. Hydrastis, aqueous..... fl. ̄ iv.
 Tr. Calendula, Lloyd's..... fl. ̄ j.
 Tr. Echafolta, Lloyd's..... fl. ̄ vj.
 Ext. Witch Hazel, Distilled, q. s. ad.. fl. ̄ iv.

Mix. Use in the same manner as the "Ulcer Specific."

In the morning after the patient's bowels have been moved and are at rest, the following ointment, introduced into the rectum, at the location of the ulcer, with an ointment injector, will be a useful adjunct:

R Balsam Peru..... ̄ ss.
 Ext. Matico..... ̄ ss.
 Sulphur lac..... gr. xlv.
 Ext. Belladonna..... gr. iiij.
 Acid Carbolic..... fl. ̄ ss.
 Vaseline ̄ iiij.

Mix. Insert the usual quantity as above directed.

This treatment, properly and diligently applied will result in a cure of the vast majority of rectal ulcers in from two to five months. Patients should be impressed with the tedious work before them, and their best efforts and assistance solicited.

Fistula.

Next to hemorrhoids, fistula is the most common disease that attacks the rectal and anal region. Hospital reports usually place fistula first in point of frequency, but this is due to the fact that persons with hemorrhoids do not apply to the public institutions for relief as readily as those afflicted with the more serious disease, fistula. In private practice hemorrhoidal cases are first in point of frequency.

Fistula is usually the result of an abscess which has failed to heal and from which the pus burrows its way out through the loose areolar tissue, or similar burrowing from an abscess which has never been open.

This process may continue for some time without any special inflammatory action and without discomfort to the patient, thus giving the impression that treatment is unnecessary until trouble is experienced. This is certainly unwise, yet well meaning but poorly informed physicians have been known to advise patients with fistula not to interfere with it until compelled to do so on account of inconvenience and discomfort. It is probably true in all cases that the older the fistula the more difficult and stubborn the cure.

VARIETIES.

The varieties of fistula are complete, internal incomplete, external incomplete and complex. The complete fistula has both an internal and external opening, an internal incomplete has an internal but no external opening, an external incomplete has an external but no internal opening, and a complex fistula is one with a number of openings, branches, pockets or pouches with which the main sinus connects at various points.

Further division is usually made by dividing fistulae into two general classes: (1) Those whose origin is superficial and (2) Those whose origin is deep.

Those of superficial origin are termed anal fistulae, while those of deeper origin are termed rectal.

Anal fistulae are those which have their internal opening between the two sphincters, where a slight depression is felt, while the external opening is usually close to the margin of the anus. Rectal fistulae have their internal openings at various distances above the internal sphincter. From a surgical point of view this distinction is of importance as should the tissues between the two openings be divided it is apparent that in anal fistula only the external sphincter would suffer, while in rectal fistula both of the sphincters would be involved in the operation. One may find either of the four varieties of fistulae in either the anal or rectal region.

DIAGNOSIS.

Diagnosis of fistula, when the conditions about the anus and rectum are carefully observed, is usually not difficult, yet the almost invisible external opening of a fistula may be overlooked during several apparently careful examinations. In cases of this sort it is evident that patients are not acquainted with their true condition but come to the physician on account of the various symptoms which they may have.

When there is no known external opening, thus not clearly establishing the existence of a fistula, certain symptoms of this condition should be borne in mind.

The presence of a purulent discharge from the rectum, itching at and about the anus, swelling and the formation of a tumor which on palpation gives evidence of containing liquid matter, the formation of an abscess, or when a history of abscess is given, and soreness at one or more localized spots in the ischio-rectal region should always lead one to suspect fistula and careful examination made.

When symptoms of fistula exist the most careful examination should be made for a minute opening with a lip-like margin, or it may have the appearance of the fresh sting of a bee; a small wheal with a tiny spot in the center.

If a probe is pressed into this opening considerable resistance may be offered, but the probe will usually penetrate and will often glide freely along the canal and appear at the internal opening. When the canal is tortuous the location of the internal opening is difficult or impossible. Too much pressure must not be exerted as the probe can without very much difficulty be pressed through the tissues. In these cases, as in all others where the internal opening has not been located the following procedure will solve the problem. With a suitable syringe, either the hypodermatic with the dull canula attached, or the hard rubber in cases of larger external openings, inject sufficient milk to distend the fistulous track, while with the speculum introduced the interior is observed and the escape of the milk noticed.

Should no internal opening exist the distension caused by the injection of the milk will enable the examiner to determine the course and extent of the pouch and thereby be guided for future treatment; yet in the obscure external openings, when one suspects fistula from the presence of discharge from the rectum, the internal opening must of necessity exist if there is a fistula. It may however be a true internal incomplete fistula.

External openings of fistulae may appear at unexpected places. Matthews has reported a case which had two external openings, one over the sacrum and the other over the last lumbar vertebra. In this case the abscess began several inches distant from the rectum and the pus burrowed in an opposite direction and had no connection with the rectum.

ABSCESS.

When seen early, at the beginning of or during the existence of an abscess in this region, whether superficial or deep-seated, prompt treatment should be instituted by the application of hot poultices to hasten its formation, and the pus evacuated as soon as fluctuation is noticed. After treatment will then be similar to the same condition in any other location.

TREATMENT.

Treatment for fistula may be either by surgical means, by the use of cauterants, caustics, escharotics and antiseptics, or by the ligature. In the former and latter treatment the object is the division of the tissues between the internal and external openings, while by the method of local applications the fistulous track is cleansed and stimulated to granulations and subsequent healing of the parts.

The treatment by local applications is not applicable to all cases, yet it is certain that a much larger percentage are curable than the advocates of the knife are willing to admit, and it is also worthy of mention that fistulae which have resisted treatment by local means and which eventually drifted into the hands of our surgical friends, were discharged in a condition infinitely worse than before the cutting operation. It is true that thousands of fistulae are cured by surgical means and the patients discharged in perfect condition, yet a large number of those so treated would have been as readily cured by the milder means without the liability to greater woes. Division of the tissues, often including the sphincters, is liable to cause permanent incontinence of feces, which as Dr. Kelsey says "is always considered by the patient a very poor exchange for a fistula which was causing comparatively little suffering or annoyance."

I do not hesitate to say that while my impressions of surgical means for the cure of fistula remain as they now are, I would not employ this method except in small anal fistulae where but a few fibres of the external sphincter are involved.

Anal fistulae, those which involve only the external sphincter, having their internal opening between the two sphincter muscles can be laid open under local anesthesia only, but for the rectal variety, surgical anesthesia must be induced. The process of opening the track of the fistula

involves the use of the grooved director and following its groove with a sharp bistoury, dividing the tissues. Details of this operation can be found in text books on surgery.

TREATMENT BY THE LIGATURE.

The use of the ligature for division of the tissues between the two openings of a fistula can be traced to remote ages. It is said to have been recommended by Hippocrates, the father of medicine who lived three or four centuries B. C., and its use has been revived from time to time. Its advantages are chiefly that no anesthetic is required, no cutting operation is performed and there is no loss of blood.

This method is adapted only to simple sinuses and not to fistulae of the complex variety. Two varieties of ligature are employed and there are also two methods of division of the tissues. These are ulceration and strangulation.

If it be decided to divide the tissues by ulceration the silk ligature is usually used and simply tied in a loose knot. It usually accomplishes its work in two to three weeks.

Better results are obtained if the elastic ligature is used and the tissues divided rapidly by strangulation. The process is as follows. After a thorough evacuation of the bowels, and douching of the rectum with a teaspoonful of boracic acid in a pint of warm water, the patient is ready for the treatment. Thread a silver probe or aneurism needle with silk thread, to which a rubber ligature is attached, pass the probe through the fistula from the outside until the threaded point is within the rectum. Cut the thread and withdraw the probe backwards through the fistula. The thread should be four or six inches long, so that it can be handled easily. With forceps grasp the thread in the rectum and draw the ligature through the fistula. An artery forceps attached to the outside end of the ligature will prevent its being drawn into the opening. Pass both ends of the ligature through a perforated shot or piece of lead and draw them moderately tight, and compress the lead with a tooth forceps, as rubber ligatures do not tie well. This method

will divide the tissues in from four to ten days, depending on the bulk of tissue enclosed. If the ligature tears before cutting itself out, repeat the operation. The fistula should be cleansed daily with diluted Hydrozone. Use no ointment, as the rubber will decompose if brought in contact with it. After cutting through, dress antiseptically after the manner of other open sores.

The elastic ligature has the advantage over the silken one, in that it exerts its function continuously and evenly and requires no readjusting unless in case of an accidental tearing. When silk is used for the strangulation method it is tied very tightly around the tissues and should be readjusted every five to seven days.

The elastic ligature used is about one tenth of an inch in diameter, yet while in action, being tense, its cutting edge is very much diminished and as the intervening tissues are cut through its force becomes lessened.

When the amount of tissue to be divided is considerable the ligature will probably not cut its way out on account of the relaxation which follows its passage through. In these cases it is best to begin with the ligature moderately tight and readjust it every two or three days.

This method of treating fistula is endorsed by Dr. Candler of Chicago, in the following extract of an article by him in the *Surgical Clinic*:

"Taking the ordinary complete fistula, investigation will show that it is not a mere straight channel of even diameter. In nine cases out of ten the two terminals will be of small caliber, but between them will be a cavity varying in size and shape. This cavity often has canals ramifying in all directions. When the patient will submit to having the fistula slit up and the walls dissected out we get a radical cure, but people do not like steel around their anus, so the next best thing to use is the ligature—or in very mild cases where the caliber is small and the fistula straight and complete—curettage and packing.

"A fistula presenting, thoroughly wash the parts with a strong antiseptic solution, (1-1000 bichloride will do), then gradually dilate the sphincter and with a flexible probe find the main orifices; then with a small nozzle syringe flush out the tract; at the same time with the finger and thumb try to outline the shape and extent of the central pouch. If this seems to be extensive it is better to inject into it a solution of ichthyol and boro-glyceride with glycerine, in the following proportions:

R	Ichthyol	5 j.
	Boro-glyceride	5 ij.
	Glycerine	3 iv.

Mix.

"Repeat this injection daily for three days and at the end of that time wash again most thoroughly and then pass the elastic ligature. Draw the two ends out and clamp them with a metal button or lead bullet, making just enough tension to firmly constrict the tissue embraced. Have the patient call on you in twenty-four hours and then insert the nozzle of your syringe alongside the rubber and wash out the tract. Then tighten up on the ligature. When the patient calls again the work may be done; if not repeat.

"The advantage of taking the trouble of cleansing the parts is that you give the parts behind the ligature a chance to heal under fairly aseptic conditions, while if you leave things alone you have a cutting and granulating going on in the presence of filth.

"All blind fistulas can be treated this way by making them complete, and after all, this is the best thing to do. A blind external fistula may often be cured by curetting under cocaine and then packing for twenty-four hours with iodoform gauze. Then dust in Protonuclein and pack.

"By this method the majority of rectal fistulae can be 'treated at home' with perfect success and much profit. During treatment the patient should be kept saturated with calcium sulphide. After passing the ligature, keep the

bowels closed for forty-eight hours then open them with a full dose of castor oil or saline. Order the parts washed after each stool with a mild creosol or similar solution."

TREATMENT BY LOCAL APPLICATIONS.

Local applications of certain remedies which combine cleansing antiseptics, cauterants, caustics and tissue stimulants form a treatment for fistula that at once appeals to the physician as well as patient. As a cleansing and antiseptic agent Hydrozone occupies the first position and as such is endorsed by many writers in the treatment of fistula. It penetrates deeply into the ulcerated tissues, destroys all pus formations and stimulates granulations.

Bichloride of mercury is also of value especially in cases where there is marked decomposition or foul odor. Permanganate of potassium is also of considerable value in the latter conditions.

Carbolic acid, Nitrate of silver and Nitrate of copper are probably the most useful cauterants and caustics.

Carbolic acid may be used in ninety-five or in not less than seventy-five per cent. solution. When the latter is employed the best diluent is sperm or olive oil.

Nitrate of silver is best employed in solutions of forty to sixty grains to the ounce of water.

Nitrate of copper is applied by means of passing a copper probe which has been dipped into pure nitric acid along the fistulous canal after the usual cleansing procedures.

As a tissue stimulant Protonuclein (Reed & Carnrick) is of pronounced value. Here, as in rectal ulcer, the Special preparation is employed. By a stimulation of the white corpuscles and inciting them to greater activity in combating the destructive changes which are going on, it acts as a physiological cell irritant and causes a proliferation of normal, healthy granulation cells.

Being prepared for the application of this treatment the lower bowel is cleansed by a solution of Hydrozone, fifty

per cent, and the fistula is irrigated with Hydrozone, full strength.

For the irrigation of the bowel any suitable syringe is used, but for the sinus the hard rubber syringe with long nozzle is best, as all parts of the canal can be reached and considerable force used.

The introduction of the nozzle of the syringe will sometimes cause some little excitation of the internal surfaces and assist the cure, but it is good routine practice to slightly irritate or scarify the track of the fistula by means of a probe slightly roughened, and passing it up and down several times.

The carbolic acid of the desired strength having been prepared, attach a silver probe canula to an ordinary hypodermatic syringe and draw some of the acid into the barrel of the syringe. If an internal opening exists place a wad of cotton around the tip of the fore-finger of one hand and insert it into the rectum and over the opening, so as to prevent any of the acid from entering the bowel. Insert the canula well up in the fistula, practically in contact with the cotton pressed on the opening, and as the canula is slowly withdrawn press out the acid, a drop at a time until the external opening is reached. Press along the canal with the finger a few moments for the purpose of distributing the acid, and press out the excess if there be any. After a minute or two pass a probe, tipped with cotton and wet with dilute alcohol, up and down the track of the fistula and immediately afterward syringe it out with a little water. These applications are made once a week or once in two weeks according to the indications of the case. After drying the parts apply Special Protonuclein throughout the fistula by means of a powder blower or other suitable means. This part of the treatment should be performed twice a week, preceded by a cleansing irrigation with Hydrozone.

Treatment by Nitrate of Silver solution is applied in the same manner as the Carbolic Acid, but this can be used more freely than the acid, in fact sufficient should be used to reach

all parts of the fistulous track, the excess being allowed to run out. During this treatment the external parts should be lightly covered with vaseline to prevent discoloration and irritation of the skin as the excess escapes.

The carbolic acid seems most beneficial in the early part of the treatment, while nitrate of silver is indicated when the granulations are slow in forming and the surfaces indisposed to heal. However either remedy is used almost exclusively by some operators while others alternate them to advantage.

Be careful that the external opening is not healed before the interior has done so. Internal incomplete fistula, is not easily treated in this manner, and self treatment by the patient, using the Ulcer Specific given under rectal ulcer, as directed there, can be employed. In connection with the treatment just given, an occasional douching of the fistulous canal with bichloride solution, 1-1000 will be beneficial. Keep the canal clean by daily flushings with a 2% Carbolic acid solution, except after Protonuclein has been thrown into the fistula. This should be allowed to remain undisturbed 36 hours. Wearing a piece of iodoform gauze in the canal, packed in lightly and renewed once every two days is often beneficial, acting both as an irritating and stimulating agent. Iodine has been recommended for injecting fistulae but the remedies mentioned are more preferable. The injection of pure eucalyptol, thoroughly permeating every part of the fistula is often followed by good results. Even when carbolic acid or nitrate of silver are used an occasional injection of eucalyptol will be of benefit and hasten the healing process.

Ointments are of little value in this disease. in fact it is a question whether the introduction of oils and fats is not decidedly contraindicated. Cleanliness, antiseptics and stimulation being the three leading points, little is to be gained by other measures.

DR. MASON'S TREATMENT FOR FISTULA WITHOUT CUTTING.

This treatment is quite similar to that used by Dr. Bennett, Austin, Tex. "Prepare the patient by the use of cathartic medicines, enemata and restricted diet so that the colon will be as nearly empty as possible. Syringe the fistulous track with a solution of peroxide of hydrogen and follow with plain water. After this is done anesthetize the track with a ten per cent. solution of cocaine. Now fill a good sized rubber or glass syringe with a saturated solution of nitrate of silver. Place a rubber finger cot on the index finger and place it firmly over the internal opening of the fistula if it can be found.

It can usually easily be located by careful search with the finger in the bowel. Put cosmoline on the skin to prevent it from being burned by the fluid that runs out. Introduce the syringe point firmly into the external opening, completely closing it, and with the finger over the internal opening, force the intervening cavity full of the silver solution, holding it there for a short time. This will fill to the fullest extent not only the main track but also any branches that may be present. Remove the syringe and with the finger massage the fistula thoroughly to bring the medicine into contact with all parts. In case the internal opening cannot be located, force the solution in just the same, but before doing this inject an ounce of sweet oil into the rectum so that should any of the solution enter the bowels no harm will be done. Nothing should be put into the fistula after the silver solution has been injected. Unless the external opening is quite large a crucial incision should be made to secure a good drainage. The entire lining of the fistula will slough away in five or six days and healthy granulations spring up to take its place. The external opening must be kept well dilated so as to allow free drainage, and a moist corrosive sublimate dressing applied for

a few days. If the first treatment is not sufficient to cure, repeat the operation after two or three weeks."

The general health of persons having fistulae is usually below par, especially when the disease has existed for some time and the discharge profuse. There has been some inclination among writers to associate fistula with pulmonary tuberculosis, yet beyond that predisposition which a condition of lowered vitality affords, it is probably erroneous to associate the two. It may also be said that the systemic conditions which predispose to tubercular disease also render the person more liable to fistula.

Persons who are poorly nourished, anemic, and in whom fat is noticeably absent, have but little power of resistance against the pathogenic organisms which are liable to be introduced into the body and proliferate there, and conditions which in the robust and well nourished are scarcely noticed, here become painfully apparent.

Allingham of London, who has had ample opportunity for observation, reports that of fistulous patients seen during a period of seven years, fifteen per cent. were more or less tubercular, although many of them were thus classified who merely gave evidence of predisposition to tuberculosis or presented some of the early signs of the disease.

Another writer who has made observation in this connection says: about twelve per cent. of fistulous patients are subject to tuberculosis, and about five per cent. of tubercular subjects have fistula.

From this it will be seen that the percentage is not sufficiently high to warrant any other connection between the two conditions, than the one previously mentioned; the predisposition which a condition of lowered vitality affords.

In this connection it is not necessary to more than remind the practitioner to attend to the general treatment of these patients. Much good can be accomplished by the administration of tonics, reconstructives, tissue builders, etc. Iron and arsenic are especially valuable, also the hypophosphites and cod liver oil.

Rectal and Anal Fissure, or Irritable Ulcer.

Fissure of the anus and rectum is probably the most painful disease that affects this region. As implied by its name, this disease consists of a fissure or crack in the mucous membrane of the lower part of the rectum and usually extends outward involving the **anus**.

As the anus is that point at which mucous membrane ends and skin begins, it is evident that a fissure in that locality involves both the anus and lower part of the rectum. The length of a fissure may vary from one fourth to three fourths of an inch, and in depth it may appear only as a delicate red line or it may extend downward through the mucous membrane and connective tissue to the sphincter muscle. The edges may be smooth, or ragged and everted.

The symptoms of fissure are first, pain. This may be so severe that the victim will suffer the most excruciating agony. Pain is more acute during defecation and continues for several hours afterward. When the fissure is located over the sphincter, the pain usually begins with the passage of feces. When situated higher, above the muco-cutaneous junction, the pain is more severe an hour or two after stool, and is of dull aching character.

Fissure is easily recognized. An ocular examination being all that is necessary. When a fissure has existed for some time, a peculiar cutaneous excrescence appears at the anal verge, which by some is considered a diagnostic sign, but its absence does not imply that no fissure exists. With the finger, draw the mucous membrane downward and the fissure, if present, can readily be recognized. When it extends downward, involving the skin, its presence is noticeable immediately on inspection.

On separating the folds of mucous membrane which sometimes overlap the fissure, and following its course upward, the fissure will be found to lead to a small ulcer, most frequently elliptical in shape, which is extremely irritable.

TREATMENT. The surgical treatment of this condition consists of dilating the sphincters, advised by all authors of text books and taught in all schools. This method of treatment is not uniformly curative and has disadvantages which appeal to the patient. General anesthesia is probably the principal objection. Patients should be fully informed of the slow progress that will be made by local treatment, yet withal, the majority will prefer it.

LOCAL TREATMENT.

Local treatment must be directed toward converting the fissure into a simple sore. This is done by applications of carbolic acid, pure. The applications may be made without the use of the speculum, if the fissure can be exposed to view, but if not the speculum must be used. A small speculum should be used as the sphincters are very irritable in these cases and contract readily. Before inserting the speculum, the parts may be cocaineized by the application of a 10% solution, applied on cotton. The speculum is now well oiled and passed into the rectum, the fenestrum of same being so placed that when the slide is removed, the fissure will appear in the opening. A probe is now tipped with cotton and dipped into pure carbolic acid and drawn through the fissure and over the ulcer several times until it has turned white. The excess, if any, should now be wiped off and a bit of cotton twisted to the length of the fissure and laid into it. Two or three applications of this nature will convert the fissure into a simple sore, the healing of which can be stimulated by applications of nitrate of silver, forty grains to the ounce. The ragged edges can be trimmed off or cauterized with stick nitrate of silver or pure carbolic acid. The little tab or cutaneous excrescence should be removed.

If soreness follows the application of the acid, a suppository of opium and belladonna may be inserted as required. After the fissure has been thus treated and its irritability removed, the patient is given an ointment for thorough applications externally. The formula for this is,

R	Acid Salicylic.....	gr. xx-xxv.
	Morphine Sulphate.....	gr. iss.
	Ext. Belladonna.....	gr. xx.
	Ung. Lead Subacetate.....	5 ij.
	Simple Cerate.....	5 ij.

Mix. If this ointment causes pain, lessen the amount of salicylic acid, until later in the treatment, and gradually increase. As salicylic acid has the power to disorganize calloused tissue, its use is indicated especially when the rough and tough edges exhibit an inclination to resist other treatment.

Dr. Geo. J. Monroe, of Louisville, a well known writer and rectal specialist, treats fissure by forcible dilatation or by local applications. For treatment by the latter method, he proceeds as follows.

Wash the parts with tar soap and water, then wash with hydrogen dioxide; saturate absorbent cotton with a 20% solution of cocaine, press a part of this into the anus and a part on the outside. In eight or ten minutes remove this, apply hydrogen dioxide to fissure and follow this with an application of balsam Peru. Repeat this daily. He also uses nitrate of silver applications, three grains to the ounce, applied with a camel's hair pencil. This may be repeated every other day. The nitrate of silver treatment is not used in connection with the one in which balsam Peru is used, unless to stimulate the ulcer. In addition to either treatment, he gives patients the following ointment.

R	Menthol,	
	Carbolic Acid.....	āā 5 j.
	Sweet Almond Oil.....	fl. 5 ij.
	Zinc Oxide.....	5 ss.
	Benzoinated Lard, or	
	Simple Cerate.....	5 iv.

Mix. Apply twice a day.

Dr. Agnew's treatment, aside from dilatation in patients who will not allow this operation is as follows: He uses carbolic acid applications, to convert the fissure into a simple sore, and after the fissure has lost its irritability, he snips off the tough edges with a scissors, and supplies the patient with the following ointment for use at home.

R	Acid Salicylic.....	gr. xv-xxx.
	Morphine Sulphate.....	gr. i-ij.
	Ung. Belladonna.....	5 ss.

Mix. Apply twice daily.

Instead of salicylic acid, bichloride of mercury may be employed in the following manner.

R	Mercuric Chloride, Corros.....	gr. ij-iv.
	Morphine Muriate.....	gr. ij-iv.
	Ung. Belladonna.....	5 j.

Mix. Use twice daily.

If there is an indisposition to heal, after the irritability is lessened, and the ragged edges removed, he applies nitrate of silver, stick, to the inactive sore to stimulate it. Apply gently so as to leave a thin coating of albuminate of silver over it. Bichloride of mercury may also be used for this

purpose, gr. ss. to water fl. $\frac{3}{4}$ iv. Apply with a camel's hair brush after the sore has been dried with absorbent cotton. Two grains of muriate of morphine, added to the bichloride solution will render it painless. Cleansing with peroxide of hydrogen and filling the fissure by a covering of flexible collodion, after cleansing with peroxide is recommended, as it supplies protection and rest to the parts. For the purpose of converting the fissure into a simple, tolerant ulcer, he also advises the use of his hemorrhoidal fluid, injected in two or three places along the fissure, into and beneath the bed of the ulcer, one or two drops being used. This produces a slough and at once brings ease to the patient. Deep fissures should not be so treated, as sloughing of the sphincter might result.

Another treatment consists of applying a strong solution of cocaine to the parts, to facilitate the introduction of the speculum, after which a pledget of cotton, wet with carbolic acid, pure, is laid in the track and allowed to remain for a few moments. This produces complete anesthesia of the parts and a very sharp bistoury is then gently drawn through the bottom of the track, two or three times, or sufficiently often to be sure that a little depth has been reached. Finally the point of the knife is pressed into the tissue more firmly at several places, as if making punctures. The after treatment is the same.

TREATMENT OF FISSURE BY DILATATION OF
THE SPHINCTERS.

The objects in view when treating fissure by dilating the sphincters are to rupture the bed of the fissure and changing the form of the attending ulcer, and to give the parts the necessary rest by the paralysis of the muscles.

The operation is performed in the manner described in the chapter devoted to that subject.

After dilatation the fissure should be examined and if the surrounding mucous membrane is thickened or overhangs along the edges it should be trimmed off. The skin tab usually accompanying fissure should also be removed, after which the ulcer and torn fissure are dusted with either aristol or iodoform, preferably the latter, and a suitable dressing applied and held by a T bandage.

If pain or soreness follow, apply hot water externally and introduce a suppository of either opium or cocaine, or opium and belladonna. Two or three days should elapse before a movement of the bowels takes place, and if the flushing previous to the operation was of sufficient quantity there will be no desire for a movement before this. Should there be an indisposition to heal, especially the ulcer, touch lightly with carbolic acid, seventy-five per cent. solution after a cleansing with hot bichloride solution, 1-1000.

The use of the salicylic ointment will also be of service in assisting the removal of the superfluous tabs of membrane and promote the healing process.

Prolapse of the Rectum.

Prolapse of the rectum frequently occurs in children, and in adults is not by any means rare. This condition may appear in three forms: Partial, when the prolapsed portion consists of mucous membrane alone. Complete, when the prolapsed portion consists of not only mucous membrane but also the muscular coats of the rectum. The other form is really invagination of the bowel as in this condition the upper or movable part of the rectum prolapses into the lower part.

Fortunately the latter condition is rare, as it is extremely serious and unless seen in its early stage almost invariably requires an operation.

Partial prolapse is most frequently associated with internal hemorrhoids, the protrusion of which force the mucous membrane down and beyond the verge of the anus. In these cases a cure of the piles will cure the prolapse. This form also occurs frequently in children and is due to diarrhoea, worms or other irritations which cause the child to bear down. Simple prolapse of the mucous membrane but seldom exceeds a length of two inches, is thin to the touch and gives evidence of being mucous membrane only. When the protrusion is longer, thicker and more fleshy to the touch it is probably the complete form of prolapse. If seen late, especially if there exists an irritable sphincter which is likely to be somewhat contracted, strangulation may be present and cause the patient most severe pain. In extreme cases of complete prolapse part of the peritoneum may descend, and with it parts of the intestines, the bladder or an ovary.

The third variety is recognized when it has protruded externally, by observing that when the finger is passed along the external surface of the protrusion it will not stop when

the level of the anus is reached, but will continue upwards into the body. In both other varieties the external surface of the prolapsed portion will be found continuous with the membrane of the anus.

TREATMENT.

PARTIAL PROLAPSE.

If hemorrhoids exist, as is often the case, direct treatment toward their removal and treat the prolapse later, if necessary. In children it is not uncommon to find that they have one or two attacks of this trouble and are subsequently free from it entirely. Before applying the stronger applications necessary in adults and obstinate cases, it is best to annoint the prolapsed membrane thoroughly with an astringent ointment, such as of gallic or tannic acid, acetate of lead or bismuth, and return the parts into the body. Or, simple reduction and an injection of half an ounce of the Ulcer Specific mentioned under the treatment of rectal ulcer, immediately afterward. The bowels should be kept under restraint for a few days by means of astringents or opium, and the first movement secured by means of an enema.

When more radical measures are necessary Carbolic Acid is perhaps the safest and best remedy, used by injection.

A ten to fifteen per cent. solution in equal parts of water and glycerine should be injected at two or three places, about half an inch above the margin of the anus, about the location of the internal sphincter, to the edge of which the adhesions are intended to attach the mucous membrane. Five to eight minims should be injected at each spot, and care must be exercised so as to deposit the fluid just beneath the mucous membrane, into the sub-mucous space, the object being to excite sufficient inflammatory action to cause an exudation of plastic serum, to produce adhesions between the mucous membrane and the muscular coats.

The following formula may be used for injection :

℞ Acid Carbolic..... fl. ʒ j.
 Glycerine fl. ʒ iv.
 Aqua q. s. ad fl. ʒ j.

Mix.

Ergotin has been recommended for these injections, but its use is more liable to be followed by abscesses than that of carbolic acid. The following ointment is an excellent one for use in simple prolapse, or after injections.

℞ Ext. Ergot..... ʒ ij.
 Acid Boracic..... ʒ ij.
 Ext. Conium..... gr. xv.
 Iron Subsulph..... gr. xl.
 Cocaine Muriate..... gr. viij.
 Vaseline ʒ j.

Mix. Apply into rectum after reduction of prolapse, or on the prolapsed portion before reduction.

Mason recommends the following: "Apply cocaine to the protruded mass and then make from four to six stripes along the long axis of the prolapse with fuming nitric acid. After this has been done, oil the parts well and replace the prolapsed portion. Do not allow a bowel movement for four days and then only in the recumbent position and as a result of an injection of oil or flaxseed solution. This operation is painless, safe, easy to perform and will cure nearly every case."

COMPLETE PROLAPSE.

Treatment for this condition demands an examination as to its cause. It may be due to a relaxed sphincter which allows the lower portion of the rectum to descend. In these

cases a shortening of the sphincter by contraction is indicated. This is usually accomplished by means of the actual cautery and necessitates quite an extensive and elaborate preparation not generally at the command of the general practitioner. This also applies to the treatment of a swollen, engorged or hypertrophied condition of the protruded mass, for which the best treatment is excision of sufficient of the enlarged portion to relieve the tendency toward protrusion. Contraction of these parts by the actual cautery is also practiced by some operators, as is also the knife in operations for contracting the sphincter.

The third variety, or invagination, is usually not seen until considerable engorgement and perhaps strangulation has taken place and reduction is impossible. In these cases secure a good surgeon without delay as it is a formidable condition and one that requires all the surgical skill of the best operators.

Rectal Polypus.

Polypi may occur in the rectum, arising as they do from mucous membrane, wherever located. The varieties are similar to those which are found in the nose, and their removal may be accomplished in the same manner. The subject is mentioned however for the purpose of referring to their removal by the injection method, in a similar manner as hemorrhoids. They can be distinguished from piles by their color, being of a pinkish tint and bleeding easily when of the mucous variety. Any mucous polypus can be permanently removed by injecting it in a similar manner as hemorrhoids, but when the tumor is hard and fibrous, its removal is best accomplished by the snare. If polypi are mistaken for hemorrhoids, as they frequently are, and treated as such, no harm will result, but their removal perfectly accomplished.

Reflex Irritation Due to Rectal Diseases.

Rectal diseases are a prolific source of all manner of abnormal conditions and especially of peculiar nervous manifestations, due to what is termed reflex irritation.

The generous nervous endowment of the lower end of the rectum is responsible for these conditions. At the verge of the anus the sensory nerves are most abundant, which explains the extremely sensitive condition of this part; while at a distance of two or three inches above the anus the sympathetic nerves predominate. This accounts for the difficulty of locating the cause of many reflexes, should the lesion be located in the portion of the rectum where the sensory nerves are not so prominent, and where the sensibility is not sufficient to enable the patient to locate the trouble.

Prof. Pratt has said: "In all pathological conditions, surgical or medical, which linger persistently in spite of all efforts at removal, from the delicate derangements of the brain substance that induce insanity and the various forms of neurasthenia, to the great variety of morbid changes repeatedly found in the coarser structures of the body, there will invariably be found more or less irritation of the rectum, or the orifices of the sexual system, or both."

Orificial surgeons are often accused of attributing too much to reflex irritation, yet it is true that much that should be recognized by medical practitioners is too frequently overlooked.

Among the disorders which may be caused by rectal irritation, and toward which attention should be directed should they prove refractory, may be mentioned, abdominal

pains, headache, insomnia, digestive disturbances, irritability of the bladder, nervousness, melancholia, irritability, sexual weakness, nervous prostration, and abnormal conditions of any nature that indicate a perversion of the nervous equipment.

The local lesions that are liable to cause either or several of these reflex disturbances are generally fissure and irritable ulcer, undiscovered fistula, rectal ulcer, proctitis and a form of colitis characterized by the discharge of mucous casts of the bowels, tenesmus and considerable pain.

A full consideration of this subject would require more space and ability than are at my disposal and all I can hope to do is to direct attention to the factor of rectal diseases in the production of the obscure pathological conditions so frequently met with, and which so persistently resist the action of symptomatic treatment.

Dilatation of the Sphincters.

Forcible dilatation of the sphincter muscles of the rectum is undoubtedly practiced with injudicious frequency by many rectal operators. It has been recommended as a curative measure for practically all the abnormal conditions that may be found in or about the rectum and anus and on this account, when practiced by its ardent but unwise advocates, has become the cause of much damage and untold suffering.

That there are certain indications in which dilatation of the sphincters will benefit, none will deny, but when practiced as a routine treatment under circumstances in which it is entirely uncalled for, it becomes little less than malpractice.

It is indicated in all conditions where spasmodic muscular contractions occur, regardless of what other disease may or may not be present; in fissure it is unquestionably of service and its application is quite general.

In any condition of abnormal tightness of the sphincters, forcible dilatation will afford relief; in cases of obstinate constipation when the movement is followed by a feeling of exhaustion or depression, especially in persons of a highly excitable nervous temperament; people who can laugh until they cry and cry until they are a wreck; especially women, will find relief after a thorough dilatation. Women subject to hysteria are frequent sufferers from rectal diseases, and will usually be benefited.

As is well known, the external sphincter is the last of the voluntary muscles to undergo relaxation due to anesthesia; also that stretching this muscle is of decided value in

reviving a person when anesthetics have been administered too freely.

This is also the case when persons have become unconscious from drowning, action of narcotics, heart failure and coma from various causes.

Before attempting to dilate the sphincters be sure that the patient is thoroughly anesthetized; otherwise spasmodic contractions will surely occur. Two methods are used; the hands of the operator and the instrument known as the rectal dilator. Both methods have their advocates and there are good reasons for recommending either one of them.

Those advocating the use of the hand, more correctly the thumbs and forefingers, argue that as the muscles are gradually dilated the slight yielding sensation can be felt and used as a guide and thus too great a degree of dilatation avoided. On the other hand, advocates of the rectal dilator argue that by the use of the instrument the degree of dilatation is always evident, subject to measure by the foot rule, and the limit of the instrument will always be a silent witness in the instance of suits for malpractice which are liable to follow any sort of medical or surgical treatment. In the light of legal difficulties the operator who trusts to his senses and stops the stretching when he considers that sufficient force has been expended, would undoubtedly be somewhat eclipsed by the mute steel witness of the advocate of the instrumental dilator. This line of argument has but recently been presented to me, and I deem it of sufficient value to give it space here.

Perfect anesthesia having been induced insert the thumbs of both hands or the thumb of one hand and the first and second fingers of the other into the anus, and gradually yet forcibly produce complete relaxation and paralyzation of the muscles. Care must be taken not to rupture the external sphincter, an accident that is liable to occur when the force used is too great or too rapid. The appearance of the mucous membrane protruding from the anus will indicate sufficient manipulation.

Kneading the external sphincter and the use of the graduated hard rubber dilators will aid in overcoming the resistance and lessen the liability of rupturing the muscle. In women the rectum is capable of greater dilatation and it should be borne in mind that their support anteriorly is less tense and durable than in the male.

When the expanding dilator is used for forcible dilatation the usual preliminaries are observed and the instrument introduced. By the use of the set screw gradual expansion of the blades is obtained until the desired degree of dilatation is reached.

Any of the expanding dilators will be found applicable for this treatment, yet none of them are better than the regular Pratt sigmoid speculum.

In order to avoid the usual defecation due to anesthesia as well as dilatation, see that the bowels are thoroughly evacuated by a flushing half an hour previous to the operation.

For treatment of fissure by dilatation of the sphincters, see under Fissure.

RECTAL DILATATION WITHOUT ANESTHESIA.

From an article in the *Medical World*, by William L. Dickinson, M. D., Professor of Rectal Diseases, Saginaw Valley Medical College, Saginaw, Mich.

"A patient comes to us, and having made an examination we inform him that he can be cured provided he is willing to have an operation, and that it will be necessary for him to take an anesthetic. Reluctantly he consents to our proposition and returns home, with the understanding that the operation is to be performed as soon as he can be prepared for it. But having talked with friends, he decides not to take the chloroform and calls us up by telephone to inform us that he has changed his mind and will not have the operation just at present, as he seems to feel some better. In a few days we learn that the patient has gone to another doctor,

and that the other doctor has promised to do what he can for him, without the use of chloroform, and we also know that if the patient gets any benefit whatever from the treatment, that his influence will always be in favor of the doctor who did not insist on giving chloroform. We may know that he used very poor judgment and was very foolish not to follow our advice and be permanently cured, but on the other hand, he may know that he feels much better now, and as he did not have to take the chloroform he will not worry about what may occur in the future.

The time honored treatment of anal fissure by dilatation under chloroform anesthesia was both effective and speedy; but we can accomplish the same results in a little longer time by painting the fissure with a ten per cent. solution of cocaine and then dilating the sphincters with Pratt's rectal dilators, commencing with the smallest, and increasing to the largest size that the patient can stand at each treatment. By the forcible dilatation of the sphincters under an anesthetic we can usually cure our patient by one treatment, whereas under the gradual dilatation method it may require two or three weeks to accomplish the same result, but when a patient consults us and we explain the two methods to him, he nearly always chooses the longer method if he can possibly spare the time to make the requisite number of calls at our office. This is quite natural, as every one shrinks from anything called an operation, and readily takes up the treatment that is nearly painless. It is well to paint the fissure with a ten per cent. solution of nitrate of silver after the dilatation. I instruct the patient to return in three days for another treatment, and to apply to the fissure, twice daily, after bathing with hot water, and ointment composed of

Orthoform grs. xx.

Ichthyol ʒ ij.

Lanolin ʒ j.

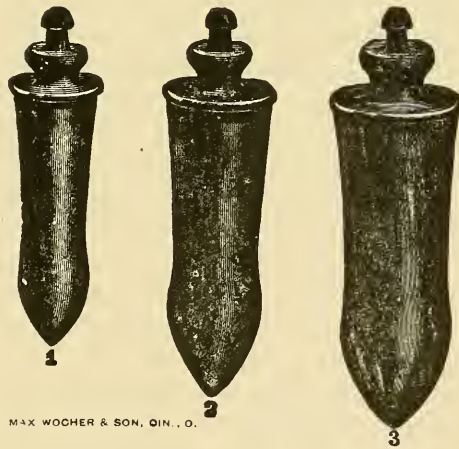
Mix.

Many persons who are now great sufferers from the common diseases of the rectum, would gladly have an opera-

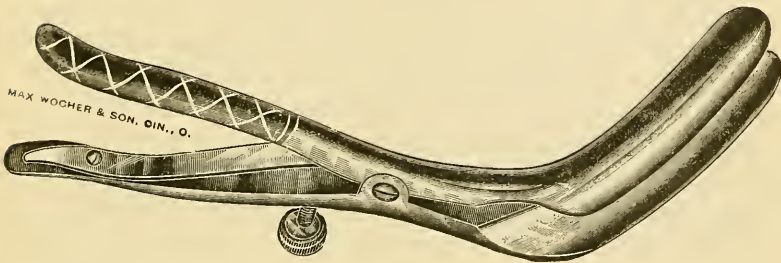
tion for their relief if we could only assure them that they could be cured, and without the necessity of losing consciousness. We would also make more financially, and keep many a patient from going to some man who perhaps knows little or nothing about the case, but does have a far better knowledge of human nature than we, and also understands the business side of the profession.

I consider it a duty we owe to our patients and also to ourselves, to do all in our power to keep them from going to the irregular practitioner, for as regular, educated physicians, we ought to be able to cope with all diseases of the rectum in an intelligent manner, and thus give entire satisfaction to our patients."

GRADUATED
RECTAL
DILATORS,
AND
PRATT'S
SIGMOID
SPECULUM
AND
DILATOR.



MAX WOCHER & SON, QIN., O.



Diseases of the Anus.

PRURITUS ANI.

Obstinate itching of the anus is one of the most torturing conditions imaginable. Patients frequently consult the physician with a statement that they have itching piles, but on examination, hemorrhoids are usually found absent, unless possibly external tabs which have become inflamed and oedematous. Pruritus may, however, accompany almost every disease of the rectum, and while perhaps technically not a disease, but a symptom, it frequently causes more annoyance and acute torture than many of the more serious diseases. Physicians as a class, excepting only those who have made the study and treatment of rectal diseases a specialty, do not usually credit this condition with the importance it deserves, consider it a trivial complaint easily relieved, prescribe an ointment or a wash, and because the patient, who has probably consulted some other physician, does not return, imagine he has been cured.

If many physicians have underestimated this condition, Dr. Hoyt, of New York, cannot be accused of committing this error, as the following, quoted from his contributions to the literature on the subject, will prove:

"With what anguish its unhappy victims battle through innumerable sleepless nights, fighting this demon of so-called local epilepsy, with its long array of itching, burning, exuding, corroding, exhausting and blaspheming characteristics, as though they had been brewed by the chemistry of hell! The whole organization becomes a chaotic discord, the disposition is cruelly warped, the countenance shows a sad picture of living woe, the carriage is nearly lost to all laws of equilibrium, and the complete being merges into a throbbing phantom of despair, trembling on the very threshold of idolized suicide.

"Of course I speak of the most aggravated cases, instances that seldom occur within the experience of general practitioners. Wherefore then these phenomena? What is the mighty influence that yields so much distress?"

"The meagre literature upon the subject hobbles upon the crutches of hypothetical inferences, telling you perhaps it is capillary congestion, or chronic proctitis, or neurotic hyperæsthesia, or eczema, or malaria, suggesting a panoramic array of remedial agencies, all unsatisfactory, thereby confessing to a sad condition of helpless empiricism."

The paroxysms of itching usually become more acute after the patient has retired for the night, the warmth of the bed seeming to increase the moisture of the parts, although the itching may continue more or less during the day. When the disease has existed for some time the skin about the anus becomes thickened and somewhat puckered, the folds numbering as many as six or seven radiating from the anus, and which on separating reveal crevices of varying depths, containing a moist secretion.

The cause of this condition has been variously ascribed to parasites, seat worms, acidity of the alimentary tract, uric acid, proctitis, neurotic conditions, etc.

TREATMENT.

Constitutionally, if acidity of the alimentary tract exists, or an excess of uric acid, the proper remedies must be prescribed to overcome these conditions.

Potassium bicarbonate, sodium hyposulphite and salicylate are indicated in the former condition, and lithia, acetate of potassium and alkaline waters in the latter.

Locally the use of sodium hyposulphite, two ounces to a pint of water, applied by means of wet cloths is often of service. If seat worms are present an injection of decoction of quassia will dislodge them and give ease to the patient, but in my opinion true pruritus ani is never caused by seat

worms. They may and do cause itching, but not the characteristic condition usually noticed. The theory of microscopical parasites of either animal or vegetable origin is more tenable from the fact that anti-parasitic remedies very frequently give better results than any other treatment.

This theory is endorsed by Hoyt, who recommends the use of Black Wash (Calomel and Line Water), three times a day, applied to the anus immediately after bathing the parts with water as hot as can be borne. At certain points or patches where this remedy fails to act he applies Ung. Hydrargyri.

For vegetable parasites sulphurous acid is an effective remedy. It may be used in fifty per cent. or stronger solution. When used pure its action is quite severe, but exterminates the parasites. Several applications of a fifty to sixty-five per cent. solution are usually preferable to one of full strength.

Citrine ointment, carbolic acid, ammoniated mercury and sulphur are among the most highly recommended remedies. I recently cured a case by two applications of a seventy-five per cent. solution of carbolic acid into the crevices between the folds of the skin, followed by the usual application of dilute alcohol.

The floors of these crevices had all the appearance of mucous membrane, from their long exclusion from air, and secreted a moisture that was present in considerable quantity. Mason recommends carbolic acid applications to the skin, using it in ninety-five per cent. solution. After either of these applications the epidermis will peel off and leave a new surface which may require a soothing dressing. Several applications, made a few weeks apart, may be necessary.

If the skin has a very harsh and dry appearance, a saturated solution of nitrate of silver should be painted about the anus and for a distance of several inches outward. This will stimulate the skin and it will resume a healthy appearance after two or three applications. As soon as this solution has dried, apply to the anus and surrounding parts,

citrine ointment, full strength. (Ung. Hydrarg. Nitratis). Dress with cotton and bandage. After three or four days the applications of nitrate of silver are discontinued, but the ointment should be used for several weeks, or until cured, if the usual progress is made.

Applications of hot water will momentarily increase the itching, but after that there will be considerable relief.

When more or less varicosity of the hemorrhoidal vessels exists, the following compound will be of service.

R	Fl. Ext. Witch-hazel.....	fl. ʒ ij
	Fl. Ext. Ergot.....	fl. ʒ ss.
	Fl. Ext. Hydrastis.....	fl. ʒ ss.
	Tr. Benzoin Comp.....	fl. ʒ ss.
	Carbolized Linseed Oil (5 per cent.).	fl. ʒ ij

Mix. Shake well before using.

Sig. Inject one to three drachms into the cavity of the rectum, once a day.

The following formulae will be found useful, as indicated.

R	Acid Carbolic.....	gtt. xx.
	Sulphur	ʒ iiij.
	Citrine Ointment.....	ʒ ss.
	Lanoline or Simple Cerate.....	ʒ ss.

Mix.

Ammoniated Mercury is perhaps as useful a remedy as is at our command. The following ointment has served me well.

R	Acid Carbolic.....	℥ xl.
	Ammoniated Mercury.....	ʒ ij.
	Bismuth Sub Nitrate.....	ʒ ij.
	Vaseline	ʒ ij.

Mix.

Calomel, in ointments is a remedy that frequently gives good results, although treatment that cures some cases will totally fail in others.

℞ Calomel gr. lxxx.
Benz. Lard..... ʒ j.

Mix.

℞ Acid Carbolic..... gtt. xx.
Calomel ʒ j.
Balsam Peru..... ʒ iss.
Lanoline ʒ j.

Mix.

℞ Acid Salicylic..... gr. xv.
Oil of Cade..... ʒ j.
Ung. Zinc Oxide..... ʒ j.

Mix.

For the itching of external piles, the following is excellent.

℞ Acid Tannic..... ʒ ss.
Powd. Camphor..... gr. xx.
Powd. Alum..... gr. x.
Powd. Opium..... gr. v.
Acid Carbolic..... ℥ x.
Vaseline ʒ j.

Mix. Apply three times daily.

Tar ointment, prepared as follows, is highly recommended:

℞ Fresh Tar.....	℥ viij.
Glycerine	℥ xvj.
(by weight.)	
Starch	℥ vj.

Mix. Rub the starch with the glycerine and mix with the tar. Put on hot stove and stir until brought to the boiling point, then remove and stir until cold. Apply on muslin and keep in place with a T bandage.

℞ Acid Carbolic.....	℥ ij.
Acid Salicylic.....	℥ iss.
Sodium Biborate.....	℥ j.
Glycerine	℥ j.
Mix. Sig. Apply as necessary.	

A good formula.

℞ Citrine Ointment,	
Resin Cerate.....	āā p. e.

Mix. Wash anus with soap and water and apply lightly once or twice a day, rubbing in well.

℞ Campho-phenique	fl. ℥ j.
Losophan	gr. xx.
Petrolatum	℥ j.
Mix. Apply night and morning.	

Eczema of the Anus.

Eczema is frequently met with, and is one of the common causes of irritation of the anus. It is caused by lack of cleanliness after defecation, constipation, the passage of irritating mucus, or discharge from a fistula. Eczema frequently extends backward toward the coccyx and sacrum for three or four inches, causing much discomfort. It usually occurs in persons whose general health is not good. When the surface is inflamed and cracked, the following is a good remedy:

- ℞ Powd. Zinc Oxide..... gr. lx.
 Camphor Liniment..... fl. ʒ j.
 Lime Liniment..... fl. ʒ vj.

Mix. Clean parts and apply olive oil and wipe dry with wool, and apply this preparation, rubbing it in well. Cover with a layer of dry cotton and bandage. When the surface has become dry, apply the following powder:

- ℞ Powd. Zinc Oxide..... gr. lx.
 Powd. Gum Camphor..... gr. lx.
 Powd. Corn Starch..... ʒ j.

Mix.

The following lotion is also valuable, especially when the skin is oedematous:

- ℞ Liq. Plumb. Subacetate..... fl. ʒ ss.
 Alcohol fl. ʒ j.
 Glycerine fl. ʒ j.
 Rose Water..... fl. ʒ xij.

Mix. Apply on wet cloths, continually until the oedema has disappeared.

The usual treatment for eczema in other locations may be employed in eczema of the anus. Cleanliness alone will do much toward the cure.

Cocaine Solutions for Rectal Work.

The use of cocaine has been somewhat restricted on account of the fear of absorption into the circulation and the resulting toxical effects.

This fear, while to a certain extent warranted, is carried too far by many, as the dangers attending the use of cocaine are more imaginary than real. Toxical effects are produced in but a small percentage of cases, and not all of them are by any means alarming.

For local applications it is useless to attempt to produce any appreciable effect short of a fifteen to twenty per cent. solution, while for injecting into the tissues a four to eight per cent. solution will suffice.

I am becoming somewhat more partial to weaker solutions for injection, not on account of the danger of stronger solutions, but in order to obtain the benefit of the more bulky injections. Filling the tissues full of water alone will render minor operations, where but a single thrust or cut is necessary, practically painless.

For the prevention of toxical effects, it is suggested that carbolic acid be added to cocaine solutions. In addition to preventing absorption, this mixture keeps better than cocaine alone, its anesthetic action is increased and there is no tendency to inflammatory reaction after its use. I never use cocaine solutions without the addition of carbolic acid. One drop of pure carbolic acid being added to each drachm of solution.

If unfavorable symptoms should occur, notably heart failure, inhalations of nitrite of amyl, will antagonize its action.

The Schleich method of securing anesthesia with but a minimum of cocaine is very well adapted to rectal work, and can be recommended for all minor operations such as the removal of cutaneous tabs, cutting through small fistulae, etc.

The formulae of these solutions follow. Tablets of the various strengths are supplied by the majority of pharmaceutical firms.

STRONG.

Cocaine muriate..... gr. iiij.
 Morphia muriate..... gr. 2-5
 Sodium chloride..... gr. iiij.
 Distilled water, sterilized..... fl. $\bar{3}$ iijss.
 M.

NORMAL.

Cocaine muriate..... gr. iss.
 Morphia muriate..... gr. 2-5
 Sodium chloride..... gr. iiij.
 Distilled water, sterilized..... fl. $\bar{3}$ iijss.
 M.

WEAK.

Cocaine muriate..... gr. 1-6
 Morphia muriate..... gr. 2-5
 Sodium chloride..... gr. iiij.
 Distilled water, sterilized..... fl. $\bar{3}$ iijss.
 M.

The normal solution is the one generally employed, and of this three ounces may be used. The strong solution is used when the tissues are actually inflamed. Of this one ounce may be injected during one operation. The weak solution is used when the previous injection has been inadequate and further anesthesia is desired in the deeper tissues. As much as four ounces may be injected.

METHOD OF INJECTION.

Injection is rendered painless by applying cocaine, or ether spray, at the site of puncture. The needle is introduced within the skin, and a few drops of solution pressed out so that the skin itself is distended by the fluid, which occasions a white wheal. Even pressure is now applied until this wheal is enlarged to the size of a penny. The needle is then withdrawn, and inserted again within the radius of the

first anesthetized wheal, and this process is continued until the line of incision is marked out. Finally, when the skin is anesthetized, the subcutaneous and deeper tissues are infiltrated. In operating upon inflamed parts the infiltration is commenced in the surrounding healthy tissue, and wheal after wheal is formed until the region to be operated upon is saturated, which is to be known by the disappearance of the inflamed color and the appearance of the white zone of infiltration.

Dr. Schleich claims that this process of anesthesia is absolutely devoid of danger. It is essential that sufficient fluid—preferably warmed to 80°-100° F.—be employed to render the tissue tense. Ice-bags to the edematous area will enhance the anesthesia, and constriction greatly assists in prolonging it.

COCAINE AND SUPRARENAL EXTRACT.

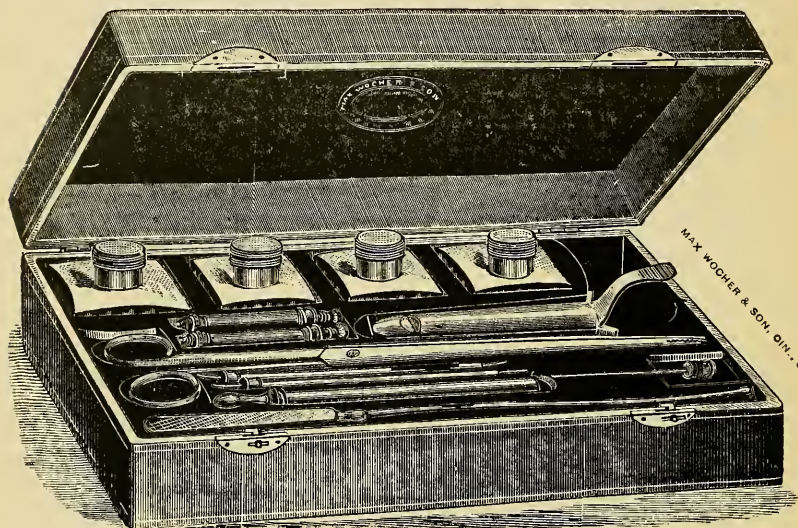
The value of suprarenal extract as a hemostatic and anesthetic agent is now generally known. In combination with cocaine and eucaine as in the following formula the combined effects of the three drugs are obtained. Five to six minims injected into the skin or part to be operated on, will produce sufficient anesthetic action for small operations.

Cocaine muriate.....	gr. v.
Beta-eucaine	gr. v.
Sodium chloride.....	gr. x.
Dried suprarenal gland.....	gr. xxx.
Water	fl. $\bar{5}$ j.

In making this combination, the suprarenal is mixed with the water, the eucaine and salt are added after filtration, and last of all, just before using, the necessary quantity of cocaine is added. This makes a 1 per cent. solution of the cocaine and eucaine, which may be freely used in the mucous membrane without fear of poisoning.

INSTRUMENTS FOR RECTAL WORK.

The illustrations of Rectal Instruments herein shown are from electrotypes kindly furnished by Max Woche & Son, Cincinnati, O.

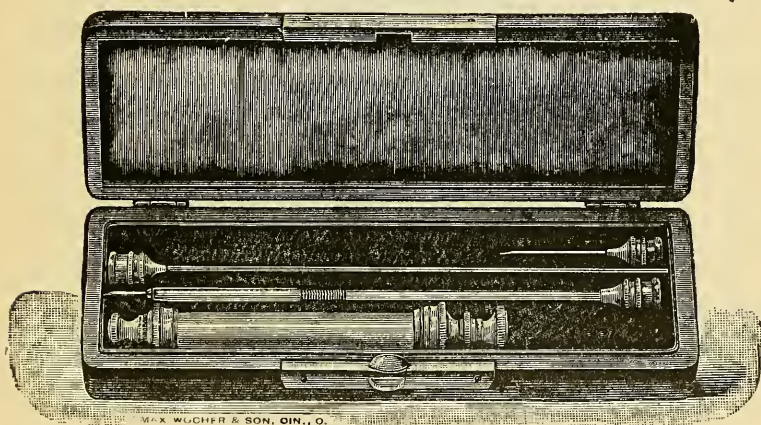


THE ALBRIGHT RECTAL SET.

This set contains one medium Brinkerhoff rectal speculum; one rectal dressing or polypus forceps; one silver probe; one suppositor for ointments; two improved syringes with caps; one pure silver probe-pointed canula, for the exploration and injection of sinuses, fistulae, etc.; one guarded long-point gold pointed needle, for injecting hemorrhoids; one ordinary hypodermic needle and four metal screw-top bottles for holding ointments, etc. Fine Morocco case.

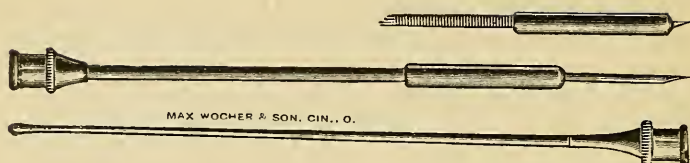
Any physician not already equipped with a set of rectal instruments, cannot do better than to purchase one of these sets. It is compact and complete and furnishes the principal

instruments for the treatment of rectal diseases. Variations in the same can be made to order. Purchasers of rectal instruments, especially those purchasing the Brinkerhoff speculum, should be careful to see that the slides in them are carefully made, as I have found by experience that certain manufacturers who list this instrument, do not use the customary care in making their goods, and turn out Brinkerhoff speculums that are absolutely worthless. Messrs. Woche and Son, have arranged this case for me, with the Brinkerhoff speculum, and I am pleased to state that their products are very accurate in mechanical construction, the slides of the speculums, both the Brinkerhoff and O'Neil, are well made, and the instruments give excellent satisfaction.



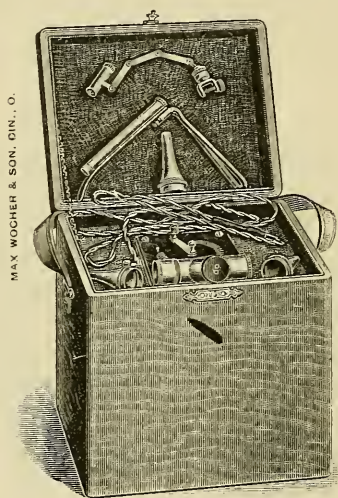
HEMORRHOIDAL, SYRINGE AND CANULA SET.

This case contains a solid barrel syringe, with cap, holding thirty-five minims; one pure silver probe-pointed canula for the exploration and injection of sinuses, fistulae, etc.; one ordinary hypodermic needle and one long-point, gold pointed needle for the injection of hemorrhoids, having a slide cover with set screw by means of which the distance the needle is inserted can be regulated. Fine Morocco case.



NEEDLE AND CANULA.

This illustration shows the guarded needle, with gold point and the flexible probe canula, made of pure silver.



PORTABLE ELECTRIC LIGHT OUTFIT.

The accompanying illustration shows a portable electric light outfit that is convenient and useful when examinations are to be made on cloudy days, at night, or whenever sunlight is not available. It has a universal attachment for connecting with either rectal, vaginal or nasal speculum, with lamp; a tongue depressor and otoscope, both with light attachments, and a diagnostic lamp.

The battery has four cells and is quite durable.

Constipation.

Constipation has been aptly termed "the disease of civilization." This is significant but not correct, as constipation is not a disease *per se*, but rather a symptom of a disease, or an evidence of an abnormal condition or imperfect functional action of some part of the alimentary canal.

The lesson taught by the small boy, who when asked by his teacher to name the most important canal in the world, replied "the alimentary," might well be impressed upon our memory and our actions governed accordingly.

Dr. Jamison, of New York, in his work on Intestinal Diseases, says, "As I have already said, the chief ill of 'civilized' people is Proctitis; the chief symptom of proctitis is constipation; the chief symptom of constipation is dyspepsia, the chief symptom of dyspepsia is neurasthenia, and so on and so on—all of them the outcome of imperfect elimination of morbid matter from the intestinal canal."

In a normal state, the rectum is empty; not a receptacle for feces, but a conduit during the act of defecation. Should the desire for evacuation not be responded to, the feces will be returned into the sigmoid cavity. Frequent repetitions of this common occurrence will in a comparatively short time lead to inflammation and to a certain extent a loss of normal power, and instead of the feces being returned into the sigmoid cavity, will distend the rectum into a more or less roomy pouch, a receptacle for the fecal matter that then becomes an irritant foreign body and a cause of auto-toxemia.

As this matter is allowed to accumulate, its liquid and gaseous portions are absorbed and the resulting hardened mass, by pressure on the circulatory system obstructs the flow of blood to and from the parts, causing congestion, more inflammation, dilation of the veins, hemorrhoids, etc.

Ever since 1496, when Gatenaria, an Italian, invented an appliance for taking an enema, the harmful effects of intestinal irritants, powerful cathartics and liver stimulants, as remedies for the cure of constipation, have been recognized. The free use of saline cathartics which cause an additional secretion of fluids into the intestinal canal is of little more value, as the resultant loss of fluids, for the next portion of digestible matter can only result in continued if not greater constipation.

In the matter of intestinal irrigation, the use of depuratory enemas of either water or oil, or either in combination with other substances, the lay public has probably for some time occupied a position in advance of the profession, as it is a fact that while the physician but seldom recommends a systematic course of this method for the purpose of relieving constipation and curing the attendant inflammation, very many of the more intelligent laity practice colonic flushings and general depurant procedures with scrupulous regularity. Any physician who has observed the passing of the chronic dyspeptic, neurasthenic, phlegmatic and hypochondriacal patient and the evolution of a normal, healthy, active and care-free person, from a course of intestinal irrigation systematically employed, must of necessity become an enthusiastic advocate of the method.

In many cases the results are little short of marvelous; in all of them sufficient benefit is derived to fully justify the practice.

Irrigation of the alimentary canal is not necessarily limited to the introduction of water and solutions into it through the rectum, but a great deal of good can be accomplished by the regular and systematic drinking of generous quantities of water. This will insure effective irrigation of the assimilative and eliminative organs; preserves health when present and assists in its restoration when absent, by restoring activity of the principal organs of the digestive system.

Very few realize how essential water is to digestion and to the digestive canal after its function is completed. There exists a great natural demand for water to carry on the normal functions of the system, for both atmosphere and heat draw moisture from the body and a considerable amount is utilized in this manner.

An organism composed of over seventy-five per cent. of water requires a generous supply for subsistence—a supply equal to the expenditure of vitality involved in carrying on the numerous functions of the body and brain.

The following may be followed as a fair schedule for the use of water as a remedy; using it with a view of obtaining its physiological action.

On arising in the morning one pint of water should be taken to cleanse the stomach of whatever debris remains from the previous day's food and for its invigorating action. The temperature of the water may be that which is most agreeable, but should not be ice-cold. During breakfast, which should follow during the next hour, at least half a pint should be taken, more if agreeable. The idea that liquids drunk during a meal weaken and impair the gastric juice may influence some against this practice, yet experience proves that there is really no ground for this theory, and no objection to it. The water rapidly leaves the stomach and does not in the least interfere with proper digestion. About an hour before the noon meal a half to one pint should be drunk and during the meal a similar quantity, if not productive of uneasiness. About four or five o'clock in the afternoon half to one pint should be drunk as a cleanser before the evening meal, during the ingestion of which a similar quantity is disposed of. Should there be no inconvenience from a full bladder during the night, a glass or two will be beneficial, taken before retiring. These quantities should be taken with the same regularity as is observed in taking medicine, and are in addition to the water required for quenching any thirst that may occur during the intervals.

At first the quantities named may seem excessive to some patients, and until accustomed to the great change smaller amounts may be taken, but should be steadily increased until the full quantities mentioned can be taken without inconvenience.

It is a singular fact that constipated people drink but little water. It has been suggested that this very fact is responsible for their condition, but such is not entirely the case. It is, however, not surprising to find constipation in people who drink less than two pints of fluids daily, nor to note the great change and general improvement that takes place after beginning a systematic course of water treatment. It is not always best to inform the patient that water is the only remedial agent needed, as by so doing you are liable to be called a water doctor, or a water crank, and your patient will soon find some drug doctor who will heartily agree with him, and continue the drug treatment they all love so well.

In order to keep your patient under observation, it is well to prescribe or furnish a remedy which will serve as an incentive to follow the treatment. For this purpose a tonic or other remedy, should the patient be in need of it, may be given at the hours mentioned, with directions to follow it always with the water. Should no actual remedy be indicated a placebo will answer very well.

Persons in health should make water drinking a habit, as eating, exercising, etc. Regularity and system is as essential for the harmonious working of the vital organs as it is for the relations of the departments in a business. Some training is, however, necessary in most cases, and what is at first not agreeable will in a short time become so.

Water is the most wholesome of all drinks. Wholesome in the German expresses a thought even more potent. In English we define the word as "Tending to promote health or contributing to it," but the German "Heilsam" expresses even more, "Healing, or possessing healing properties." It quickens the appetite, aids and strengthens digestion, is most effective in the work of elimination, prevents clogging and

removes interstitial deposits. It cleanses, irrigates, purifies and invigorates.

Diseases caused by a lack of irrigation will cause an accumulation or congestion of the contents of the gastrointestinal canal, and the victim of slow transit complains of indigestion, biliousness, flatulency, uric acid symptoms, etc. Dyspeptics of this order require a thorough internal bath from above and from below.

ENEMAS.

WHEN THEY SHOULD BE TAKEN.

To re-establish the normal physiological relations called health, after many years of perverse relations and disorderly practices, obviously requires time and intelligent attention to the prescribed directions. The factors that militate against the removal of curable diseases are: (1) The neglect of a local disorder until it has had time to exhaust the general vitality of the system.

(2) Inattention on the part of the patient after he has obtained temporary or partial relief. (3) The patient arbitrarily setting his own time limit for the cure of the disease. (4) Wilful disobedience of prescribed directions. (5) Inability to realize the importance of having the cause removed, as well as the local symptoms. (Jamison).

In all cases of proctitis or colitis, with the many attendant symptoms and ills, no better means for relieving and removing these undermining disorders can be adopted than the regular practice, twice a day, of intestinal irrigation by means of enemas night and morning. During the long period of relaxation at night, the functions of elimination and repair proceed under abnormal conditions. There may be excessive fermentation and bacterial putrefaction which generate poisonous gases that are absorbed and bring about the condition of malaise complained of on arising in the morning. At this time a small enema is advisable to relieve the excessive

pressure from gases and feces. Half to one pint of water should be injected and expelled at once. This removal of the contents of the rectum and perhaps of the sigmoid will permit the contents of the ascending and transverse colon to pass more readily toward and into the sigmoid flexure, and when half an hour or more has passed, it is time for the regular and complete evacuation of the bowels by the internal bath or flushing of the colon.

Before retiring another small enema should be taken, and at once expelled. This before-retiring enema will often do so much for the patient that it will be soon found unnecessary to take the preliminary morning injection, inasmuch as fermentation and gas are no longer present.

FLUSHING THE COLON.

Flushing the colon is a discovery of great value, although brought to notice in an irregular way, and has a place as a remedial agent with which every physician should become familiar. Various devices have been exploited as ideal instruments for the correct application of this means, yet no special apparatus is necessary, not even the long and filthy rubber tube which is known as the colon tube. This article, when introduced and insinuated into and through twelve or eighteen inches of the bowel is liable to cause a great deal more irritation and subsequent inflammation than is compensated for by the benefit derived from its use. An ordinary fountain syringe with a capacity of one gallon, and the ordinary small vaginal tube is all the paraphernalia necessary, and is preferable to the bulb syringe, as the force is entirely that of gravity.

The water used for colonic flushings should be moderately hot, as when tepid water is used severe cramps are liable to follow. The position of the body for flushing the colon may be either the genu-pectoral or flat on the back with the hips elevated, both feet on the floor so that an additional elevation of the hips may be obtained by slight exertion.

The tube should be introduced into the rectum beyond the internal sphincter, the flow of water being controlled by the stop cock supplied with fountain syringes, or by the hand of the patient. Should the desire for evacuation become irresistible after a small quantity of water has been injected, the rectum should be unloaded and a second or third attempt should be made. Success usually follows one or two futile attempts. The quantity of water necessary to produce free evacuation varies in different individuals, being a matter of capacity, but averages two to three quarts. After the proper amount has been passed into the bowel the patient may retain it from five to ten minutes. If a diuretic action is also desired it may be retained twenty to thirty minutes. When retained half an hour a considerable portion of the water is absorbed and immediate and copious urination is not infrequent. In these cases the action on the colon is largely lost, as only a portion of the water injected is passed out through the rectum. Water alone, or the addition of four ounces of glycerine to three quarts of water, is all that should ever be used for this purpose.

Do not imagine that a daily movement of the bowels precludes impaction of the colon. The daily excreta may be twenty-four to forty-eight hours over due. Stools black or dark green with a foul and carrion-like odor always indicate age, and flushing is indicated. The chief symptoms of auto-toxemia may be said to be fermentation, flatulency, sometimes to such an extent as to encroach on the breathing and cause acceleration of the heart and consequent vertigo and headache, sallow complexion, furred tongue, foul breath, muddy sclerotics, chloasmic spots, defects of vision, malaise, especially on arising, and from internal pressure, dropsical swelling or numbness of the lower extremities.

Bear this in mind when baffled by a stubborn headache, especially of the recurrent type and among women.

As to the drug treatment in these disorders it is but just to say that very often complications or conditions exist, the treatment of which demand certain drugs. In our quest of

knowledge and the holding fast to that which is good, let us not forget nor forsake the remedies that have been found of service to us. I have never been able to see any advantage result from the use of aloin or podophyllin in the treatment of patients having disease of the intestinal tract, particularly hemorrhoids. Undoubtedly the best remedy for laxative effect is cascara sagrada, given either in the form of fluid extract, aromatic extract or the dry extract. Its action is mild, causes no griping and produces a generous stool. Combined with senna it is more active, yet frequently irritating when disease of the bowels exists.

Glycerine is well suited as a diluent, aiding the cascara by its depletive action. In atonic conditions strychnine is a valuable remedy, as is well known.

Abdominal massage, following the direction of the colon is of frequent benefit, as is also a systematic course of exercise. Diet plays no small part in the action of the bowels and much can be accomplished if the patient is willing to pay attention to this particular.

Food which supplies but a minimum of nourishment and leaves a large amount of residue should be avoided. Regularity of meals is important, as is in fact regularity in all things. Food known to have laxative properties, such as prunes, fresh fruits, figs or dates may be taken in proper quantities, also food containing large proportions of liquids. The various soups, broths, bouillons, etc., need not be individually mentioned. Cereals, bran bread, the new breakfast foods and the like are indicated, the coarse particles of which are said to cause an additional amount of peristaltic action.

HERNIA.

The Protrusion of any Viscus from its Natural Cavity, through Normal or Artificial Openings in the Surrounding Structures.

INGUINAL HERNIA.

A Protrusion of the Abdominal Contents through the Abdominal Parietes, into or through the Inguinal Canal.

TREATMENT OF INGUINAL HERNIA BY THE INJECTION METHOD.

A Thoroughly Reliable, Practically Painless and Absolutely Safe Treatment for a Distressing and Dangerous Affection.

Although originated by a physician and surgeon who stood at the very pinnacle of the profession, the treatment of reducible hernia by the injection method, has, until within the last decade, been practically lost to the legitimate practitioner.

The conception and practical application of the method of treating hernia by the use of injections of irritating substances into the inguinal canal, with a view of exciting a sufficient degree of inflammation therein to cause a closure thereof by the formation of adhesions, was in a former edition of this work credited to Dr. George Heaton, but further investigations and researches prove conclusively that the honor of the discovery belongs to no other than the distinguished Philadelphia surgeon, Prof. Joseph Pancoast, M. D., whose memory is revered by the medical profession of the world.

In his "Treatise upon Operative Surgery," published in 1844, he records the treatment of thirteen cases of hernia by this method, while Surgeon to the Philadelphia Hospital, in 1836, using Lugol's Solution of Iodine or Tr. Cantharides.

According to Dr. Joseph H. Warren, the date of Dr. Heaton's first operation was 1840. He first practiced his profession in Alton, Ill., but after a short time removed to St. Louis. In 1842 he located in Boston, and although he had previously successfully treated hernia by this method, it was in the latter city that he first came to prominence, not only by the success that attended his work, but also on account of a controversy between himself and a committee appointed by the American Medical Association to investigate the subject.

Shortly afterward he went to London and Paris, where he was given a cordial reception and was invited to perform his operation in various hospitals. Returning from Europe he again resumed his practice in Boston, and continued his work until near the time of his death, in July 1879.

Dr. Heaton, although not the originator of the method, deserves much credit for taking up the work and to a certain extent perfecting it.

After experimenting with the remedies used by Prof. Pancoast, he discarded them and began the use of the extract of White Oak Bark, and compounds of which it was the chief ingredient.

Dr. Jos. H. Warren, also a Boston practitioner and intimate friend of Dr. Heaton, continued the work after the death of the latter, and in addition to devising a number of special instruments, principally syringes and needles, made some additions to the Heaton formula which, in his opinion, made it more efficient and less dangerous; for it must be remembered that although many remarkable cures were effected in the practice of these two physicians, their method was by far more severe, and the resulting inflammation considerably more pronounced than at the present stage of the

treatment. Their custom was to give large single injections, thus causing an intense degree of inflammation, and to keep the patient in bed for a period of two weeks. One treatment was often sufficient to cure the hernia, yet not infrequently was it necessary to repeat the injections several times.

Under such circumstances it is not difficult to understand that prospective patients soon began to rate this operation with those of major surgery, and considering the pain caused by the introduction of the heavy spiral needles used, preferred an anesthetic and the radical operation by the knife.

After reading Warren on "Hernia" and treatment by the method of sub-cutaneous injection, as he called it, one cannot fail to receive the impression that although he had performed the operation many times and cured numerous persons, he was constantly in dread of ill effects. This is shown by his hesitancy in urging others to take up the work, and the constant references to the necessity of extreme caution. He also condemned the use of the ordinary sharp hypodermic needle, and referred to the liability of penetrating the epigastric artery.

The success attending the modern methods of giving injections, viz: with a sharp needle plunged through the pubic tissue, and the utter impossibility of injuring any vessels of the canal, prove that his fears were unfounded even under ordinary precaution. and with but a fair knowledge of the subject. Elsewhere in this volume explicit yet simple directions are given, which if followed render the operation, if so simple a procedure can be so termed, entirely void of the slightest danger.

Contemporary with Warren, among those who manifested interest in this method of treating inguinal hernia, Drs. Davenport, Janney, J. Mason Warren, and others of more or less prominence might be mentioned.

As previously stated, notwithstanding the high professional standing of these and other physicians, the method was not endorsed by the profession at large and for a number of years little or nothing was heard of it. The unsatisfactory

termination of the conference between Dr. Heaton and the committee appointed by the A. M. A. to investigate the method, due chiefly to the inclination of Dr. Heaton to retain the secret he claimed to have discovered, may also in a measure have contributed to the decline of interest along this line of work.

Within the last decade, however, this method has been revived and has received the attention it merits at the hands of intelligent and careful practitioners, until it to-day occupies a place among the few certainties in medical or surgical practice. Much of the opposition that is found against this method originates in a similar manner to that existing against other well known and reliable forms of treatment for numerous diseases, i. e., its use by irregular practitioners. It is however true, and I believe quite generally conceded that this class of practitioners have been largely responsible for the general awakening on this subject that is apparent to even the casual reader of medical literature.

This manifest interest in the subject, now entertained by men of high professional and unquestioned ethical standing, is now rapidly assuming the characteristics of a boomerang to the irregulars, in as much as it is reclaiming to the general practitioner a class of business which formerly was almost exclusively in the hands of the class of practitioners before mentioned. This is precisely as it should be, as the general practitioner who will give the subject the necessary attention to become familiar with the details of the treatment, can apply the same with the same degree of success that attends the specialist in this work, and bring it within the reach of a larger number of unfortunate sufferers.

Prior to the perfection of this method of treating hernia, neither medical, surgical nor mechanical skill could produce anything toward the alleviation of persons thus afflicted, beyond an uncertain and actually dangerous operation, or a more or less uncomfortable truss.

Makers of trusses frequently claim curative action for their ware, but unless in very small or recent cases these statements are not supported by facts; facts that can be confirmed in the experience of any practitioner. That the truss has proved a failure as a curative agent, is now admitted by practically all except those interested in their sale. While hitherto it has been the only resort of the ruptured, the continual pressure on the parts, by exciting a certain degree of inflammation about the region of the external ring, frequently causes a closing of this opening, leaving an incomplete hernia behind it; in reality a more complicated affair than at its first appearance.

The principle of the injection method is the same as that of the radical cure operation; that of closing the canal and preventing the descent of the bowel, membranes, or both, but it possesses the advantage over the former method in that it affords perfect safety, freedom from pain, no detention from business or labor, fully 90 % of cures in cases to which it is adapted, and what to many is a consoling assurance, if it does not cure, it will do no harm.

When it is remembered that competent statisticians have informed us that the number of persons afflicted with either of the various forms of hernia, equal, if not exceed one-tenth of the male population, the vast amount of clinical material that is allowed to drift to the dealer in trusses, can easily be imagined.

ADAPTABILITY.

Any form of reducible hernia is adapted to this method of treatment, providing a truss can be obtained that will retain the same under *all* conditions and circumstances. Perfect retention must absolutely be maintained in order to obtain perfect results, and if the treatment is properly applied, every failure of cure can be traced to negligence in this particular, if the truth is told. Size of hernia, length of time it has existed, and age of patient, while to a certain extent determining the outcome, are all secondary to this one

essential; perfect and continual retention. Without this no cure can be effected. The case may be greatly benefited, but it cannot be cured. Impress this point on every patient. Presuming that retention is perfect the vast majority of hernia patients can be cured. The time required will vary and will be determined by the age of the patient, size of hernia, variety of hernia, occupation of patient, tension of abdominal walls, condition of canal and obedience of instructions. Recent and small herniae are obviously more readily cured than those of long standing and large size. If the physician employing this method of treatment wishes to guarantee a cure in every case accepted for treatment, careful selection of patients should be practiced, and no positive assurance given until after the truss has been worn for several weeks and retention found perfect. In every community one or more individuals will be found who are noted for the large herniae they have, the size of which is often astonishing. I have been consulted by persons with double hernia as large as half their abdomen, where there was no trace of internal or external ring, and all signs of a canal obliterated; the scrotum enlarged to the size of a gallon measure or more, being in fact a part of the abdomen. To attempt to treat cases of this sort, or even of much less gravity, is folly. On account of this method of treatment not being adapted to all cases of hernia, physicians opposed to it do not hesitate to condemn it, not thinking of the many instances under other circumstances in which they make an effort to relieve a patient, knowing that a cure is impossible in the particular case under treatment.

It is a fact worthy of mention, and I think of congratulation, that the physicians who oppose this treatment are usually ignorant of its technique, or being surgeons, recognize the inroads it will eventually make on the radical cure operation.

Barring the extremely large herniae referred to, and those of moderate to large size which cannot be perfectly retained within the abdomen, I do not hesitate to make the

assertion that fully 90 % of cases are curable, and more than 95 % will be decidedly benefited. I base my assertions on my experience in a practice largely devoted to this specialty, having treated a large number of patients.

TIME REQUIRED FOR A CURE.

As before stated, the time required to effect a cure will vary in different cases. Recent and small herniae are cured in from four to six treatments, while the hernia that has existed for a longer period, and which is of larger size, will require from eight to twelve, or more injections. Patients are usually treated once a week, or as soon as the effects of the former injection have disappeared. If inconvenient for the patient to make his appearance weekly, longer intervals may be allowed. This does not interfere with the cure, but necessarily retards it. No detention from business or labor is necessary, and yet if the patient is occupied at labor requiring heavy lifting, it is well to caution him and advise moderation, if possible. Running, jumping, dancing or other active exercise, when unnecessary, should be avoided as much as possible.

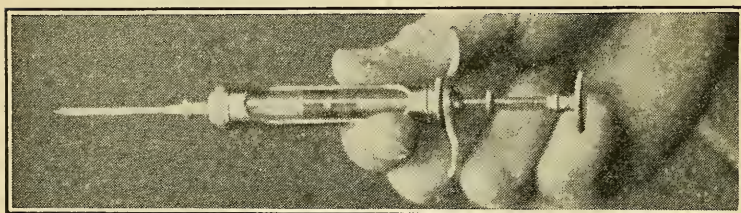
THE SYRINGE AND NEEDLE.

As far as I have been able to ascertain, all individuals or companies who are engaged in the sale of private formulae and fluids for curing hernia, have special syringes for sale, which naturally are recommended as being the best on the market and essential to success. I have found these statements contrary to facts, and my experience leads me to believe that while the instruments they offer are of good quality and may be used with satisfaction, they are by no means necessary to insure success. The prices at which they are sold are usually double their real value, and bearing this fact in mind, the object of their manufacture is apparent.

The injections may be given with an ordinary hypodermatic syringe, provided with a set screw on the piston by which the quantity of the fluid injected can be regulated.

The needle should be longer and heavier than the ordinary, so as to be long enough to penetrate the pubic tissue, and strong enough to avoid the possibility of breaking during the operation. I find some additional advantage in having a syringe somewhat heavier than ordinary, as it gives a greater firmness in manipulation.

A syringe with supports at the piston end, by which it may be grasped by two fingers gives a comfortable steadiness and makes slow and careful injection more certain.



HERNIA SYRINGE AND NEEDLE.

These syringes, together with two suitable needles, can be furnished by instrument dealers at a small advance over the ordinary instrument. Three dollars is amply sufficient to cover the cost of a good, heavy syringe and a pair of extra long and heavy needles.

There are several varieties of hernia needles in the market, but these are intended especially for introduction through the scrotum, and are made on the trocar and canula order, the point being protected by the sheath after the skin of the scrotum has been pierced, and then by gentle manipulation is passed up through the canal to the point at which the fluid is to be deposited. This method of introducing the needle has never commended itself to me, and it is somewhat gratifying to note that one of the more prominent physicians interested in this treatment, and who devised a special needle for introduction through the scrotum, has now also come to the conclusion that the direct introduction

through the pubic tissue is the better of the two. In certain cases, where there is either a difficulty in invaginating the canal or in plunging the needle through the integument and fibrous edges of the muscles, the needle can advantageously be introduced through the scrotal wall. A sheathed needle should always be used when this is done, as it is practically impossible to pass the needle up to the point at which the fluid is to be deposited, with the point of the needle exposed.

THE TRUSS.

Bearing in mind the importance of perfect retention, the selection of a truss deserves special consideration. During the several years in which I have paid special attention to the treatment of hernia and the fitting of trusses, I have made a special effort to become familiar with the different styles of trusses on the market, and I have examined and used nearly all of them with a view of arriving at some conclusion as to the best one to use.

The wire spring truss, in my opinion, more fully meets the requirements of an ideal support than any other, and it is this style that I now exclusively employ, except in very small or easily retained herniae, where I use the elastic.

There are a number of trusses on the market which embody the wire spring principle, yet are faulty in detail and absolutely worthless for practical use, especially in connection with the treatment of hernia by injection, where the most rigid care and accuracy is necessary.

Since the publication of the second edition of this work I have devised and have had manufactured a truss which in my opinion embodies all that can be desired of a perfect and practical appliance. It has been with some reluctance that I have taken this step, for fear of having my motives questioned or misconstrued, as according to the tenets of the profession, a physician cannot embark to any great extent into any enterprise without having the cry of commercialism raised.

Commercialism, which I believe is defined as the legitimate chase after the elusive dollar, is however more or less interwoven with the other commendable characteristics of the human race, and without it the physical decay and destruction of our nation itself could be presaged.

To withhold any useful article or contrivance from those for whom it is intended and whom it would benefit, for fear of being accused of being commercial, is undoubtedly unwise, and it is difficult to make the distinction between having an article marketed by dealers and receiving a royalty on sales, or to attend to the filling of orders personally. Having therefore considered the subject in the various lights, I have reached the conclusion that the best interests of those who choose to favor me with their patronage, and my own as well, will be best served by the course I have chosen, and I therefore recommend the Albright truss to the exclusion of all others purporting to be similar in construction and involving the same principle, and will supply the profession according to demand.

This truss does not encircle the body as do the hard rubber spring trusses, but the rear pad rests in the depression behind the greater trochanter, while the retaining pad rests over the location of the hernia.

The wire spring passes from one to the other over the crest of the ilium. Two bands of webbing encircle the body and fix it firmly in its position.

The device for adjusting and holding the pad in its proper position is an improvement over the older patterns and consists of a series of grooves on the spring into which similar grooves on the clasp fit, while a set screw insures absolute rigidity.

The rear pad is attached by means of a ball and socket joint which is self adjustable under all conditions and in all positions.

The desirable features of this truss are: It gives that necessary upward and inward pressure which more than any other retains a hernia properly. Mere inward pressure is

not sufficient, while the downward pressure sometimes obtained from trusses which have lost their shape is decidedly injurious. With this truss such deviation from the correct pressure is impossible. The pad rests, when properly adjusted, over the inner ring and not over the outer ring as is the case with many; it is easily adjusted to variations in the shape of different persons whose circumferential measurements are the same; it is comfortable to the wearer from the very moment of its adjustment. Being so radically different from the usual style of trusses, patients will frequently imagine that it must of necessity be uncomfortable, yet they can be assured that such is not the case. Apart from an occasional chafing due to a slight curve of the body which may have been overlooked in fitting, but which can be readily overcome, no difficulty exists from this cause.

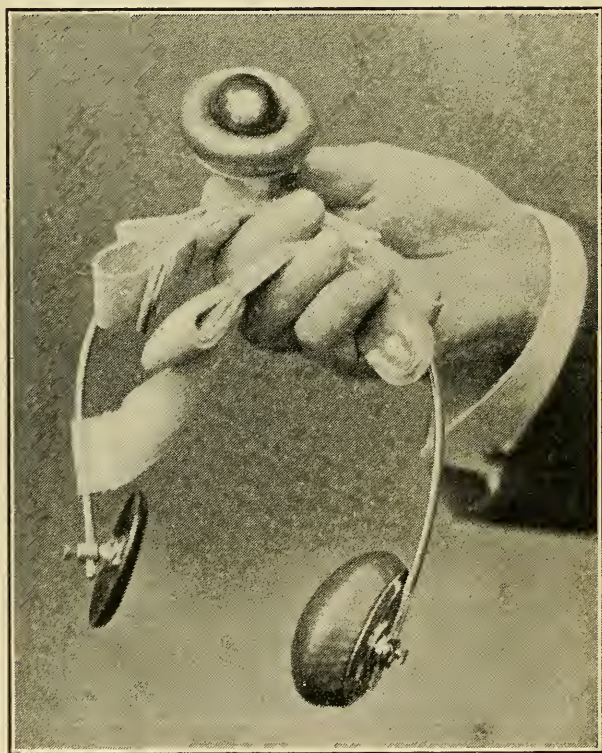
Last but not least, is the assurance that when once properly adjusted it cannot possibly move from the seat of the hernia, regardless of the position of the wearer. So firmly indeed is it held in position that it is with difficulty that the proper adjustment is disturbed without loosening the bands, even when attempting to do so.

VARIETIES OF PADS.

The pads with which my truss may be equipped comprise all the usual styles and in addition a new style of spring pad. This consists of an oblong border of leather covered rubber and a distinctly separate oblong central hard rubber pad which adjusts itself to the various degrees of pressure by means of an enclosed spring. Being automatic in its action it is especially valuable in cases where undue straining is liable to occur, as in lifting, coughing, etc. As a pad suitable to all cases it is perhaps the most desirable. In addition, the hard rubber, cedar, water and coil spring can be furnished. Elastic trusses fitted with either of these pads can also be furnished.

One occasionally meets with a hernia of such magnitude or irregularity that no ready-made contrivance will retain it,

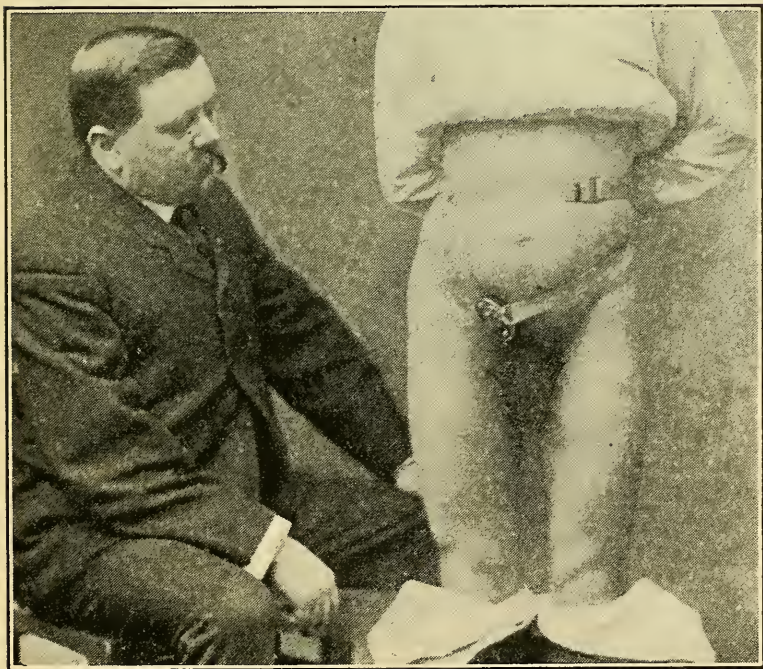
nor can one be devised in all cases, yet as this subject is here viewed only in the light of rendering a hernia amenable to treatment by the injection method, the subject of special appliances need not be discussed, as it is safe to assume that as a rule, any hernia that cannot be retained by my truss and the pads with which it is regularly fitted, is not a suitable case for treatment. In a somewhat extensive practice of this specialty I have treated but few cases in which other than the regular equipment was required.



THE ALBRIGHT TRUSS, SHOWING NEW AUTOMATIC SPRING PAD.

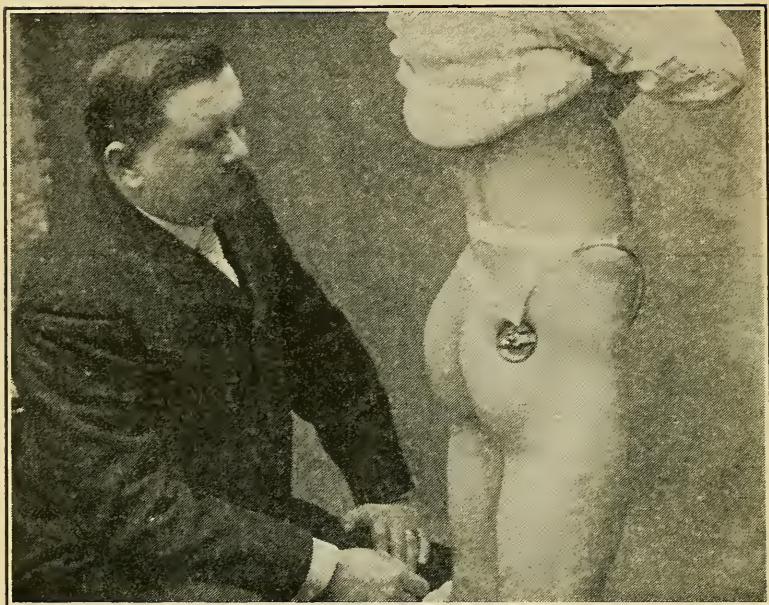
When a suitable truss is worn by the patient when he applies for treatment, no matter what its style, if it fulfills the requirements and retains the hernia perfectly, no change is advised.

See illustrations of truss and note particularly the position of the truss on the body. Proper and exact fitting is essential to success. The size of the truss required will be found by measuring the circumference of the body on a line with the point at which the hernia first appears.



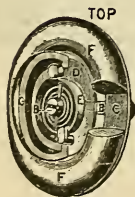
THIS ILLUSTRATES THE POSITION THE TRUSS SHOULD OCCUPY
WHEN PROPERLY ADJUSTED.

FRONT VIEW.



THIS ILLUSTRATES THE POSITION THE TRUSS SHOULD OCCUPY
WHEN PROPERLY ADJUSTED.

REAR VIEW.



THIS ILLUSTRATES THE MECHANISM OF THE NEW
AUTOMATIC SPRING PAD.

EXPLANATION OF CUT.—The central hard rubber oval pad G, is suspended on the coil spring E, which is attached to the button shank B, and all attached to the fixed plate C. This suspension of the pad in the center of a fixed, soft rubber ring cushion F, permits a gentle and beneficial extra pressure on the internal ring without the risk of the pad sinking in too far. Its action is entirely automatic.

FLUIDS FOR INJECTION.

When one considers the numerous compounds used, all of different composition, by the many successful hernia specialists, but one impression is made and but one conclusion can be reached; that the application of the treatment; the method of injecting; the technique of the operation; are undoubtedly of more importance than the fluid used. In other words, no matter what the composition of the fluid, if the injections are not properly made the result will be unsatisfactory; yet on the other hand it is also true that no matter how skillfully the treatment is applied, unless the fluid used be a proper one, the result will also be disappointing. It is probably true that one could name a hundred drugs which could rationally be incorporated into a fluid for the injection treatment of hernia, and it is only by experiment and observation that the compounds most successfully employed are suggested and perfected. While injections of alcohol, iodine, creasote, sulphate of zinc and other single remedies may cure a case now and then, it must not be inferred that uniform success will follow their use in a number of cases, as repeated trials will prove to the satisfaction of any one who is of the opinion that any irritant will suffice. In selecting ingredients with which to compound a fluid that will yield satisfactory results in a large percentage of cases, certain essential indications must be met, namely: a proper degree of irritation must be produced to cause a sufficient quantity of plastic exudation; hardening of the tissues after the exudation so as to render re-absorption impossible; solidification of the exudate and its stimulation to tissue formation; a certain degree of anesthesia; and always, asepsis.

The fluids used by the early operators who employed this method of curing hernia, were, as before stated, more or less crude and unsatisfactory. The results were not only unsatisfactory in many cases, but frequently the reaction was

such that its general use was abandoned on account of the dangers attending it.

In the light of more recent investigation and experiment, our knowledge of chemistry has been called to our aid, and substances which by themselves would be worthless or harmful, may by skillful combination be rendered safe and useful agents.

The following formulae for hernial fluids are those upon which I now most rely and employ to the practical exclusion of all others, except for the purpose of experiment. Neither of them was perfected in a day, but by many trials and experiments, both clinically and chemically, during a period of seven years or more, their present state of perfection was attained. These fluids have been used by several hundred physicians whom I have supplied, and every claim I have ever made has been substantiated and endorsed by many of them. I therefore do not hesitate to commend them to the profession as worthy of their confidence.

The following is the formula of

UNIVERSAL HERNIAL FLUID NO. 1.

R	Sulphate of Zinc.....	5 j.
	Carbolic Acid, cryst.....	gr. xl.
	Guaiacol	℥ lx.
	Powd. Cantharides.....	gr. xxv.
	Fl. Ext. Quercus Alba.....	fl. 5 j.
	Fl. Ext. Hamamelis Virg.....	fl. 5 j.
	Glycerite of Tannic Acid.....	fl. 5 j.
	Glycerine, C. P.....	q. s. ad. fl. 5 v.

Mix as directed.

Mix the carbolic acid and guaiacol with the glycerine and transfer into an eight ounce bottle. Triturate the sulphate of zinc and cantharides separately until reduced to a fine powder and add these, with the other ingredients, to the contents of the bottle. Mix thoroughly and place the bottle

at some convenient point and shake the mixture three or four times a day for at least thirty days, when it may be filtered and is ready for use.

All utensils used in its manufacture should be thoroughly sterilized, as the introduction of germs into the inguinal canal is no doubt a frequent cause of the serious inflammation sometimes reported by physicians using fluids which have been extemporaneously or carelessly prepared. The presence of carbolic acid or guaiacol in a fluid is not sufficient to render it sterile, as certain bacteria flourish in the presence of carbolic acid, and the necessary precautions must be taken in its manufacture if all possibility of infection would be avoided.

The entire absence of the slightest unpleasant effect from the use of fluids prepared by myself is perhaps largely due to the care exercised in their manufacture.

The following is the formula of

UNIVERSAL HERNIAL FLUID NO. 2.

R	Sulphate of Zinc.....	3 j.
	Carbolic Acid, cryst.....	℥ xl.
	Creasote	℥ lxxx.
	Fl. Ext. Thuja Occ.....	fl. 3 ss.
	Fl. Ext. Quercus Alba.....	fl. 3 j.
	Fl. Ext. Hamamelis Virg.....	fl. 3 ij.
	Glycerine, C. P.....	q. s. ad. fl. 3 v.

Mix as directed.

Mix the carbolic acid and creasote with the glycerine and transfer into an eight ounce bottle. Triturate the sulphate of zinc until reduced to a fine powder and with the fluid extract of white oak and other ingredients, add to the contents of the bottle. Mix thoroughly and place the bottle at some convenient point and shake the mixture three or four times a day for at least thirty days, when it may be filtered and is ready for use.

Note.—The creasote used is not beechwood creasote,

but that obtained from the destructive distillation of coal tar. Some physicians located in the West have written me stating that the article could not be obtained, yet as it is so common in the East it seems hardly possible. In this section all drug stores sell it as a remedy for toothache.

The same precautions should be taken in the manufacture of this fluid as in the preceding one.

The purpose of allowing the mixture to stand for thirty days before filtering is to allow the chemical changes to take place, as for example between the zinc sulphate, carbolic acid and the tannin in the white oak and witch-hazel, and in the glycerite of tannin in fluid No. 1; and to prevent precipitation after filtration. If filtered shortly after the mixture is made there will be considerable precipitation within a few days thereafter.

In as much as I here mention two fluids for injection, the question will naturally arise, when shall No. 1 be used; when shall No. 2 be used; which is the better of the two; why not use only one fluid? etc.

Answering these questions is a task in which one may find difficulty in expressing himself clearly, as practical experience is the only real and true guide.

My experience with both fluids has been quite extended and results so eminently gratifying, that were I asked to select one and use it exclusively, the choice would cause me considerable concern.

Either fluid is adapted to all cases, and all curable cases will be cured by the use of either fluid. The difference however is this; Fluid No. 1 is more irritating and causes rather more exudation than No. 2. This is chiefly due to the Cantharides which it contains; also more astringent on account of the larger quantity of Tannic acid, as the No. 2 fluid contains no tannic acid other than that furnished by the fluid extracts of white oak and witch-hazel. For these reasons No. 1 is more especially indicated in the treatment of older persons, or in cases where the hernia has existed for many

years and caused the surrounding tissues to become more hardened and fibrous.

In these cases the irritation necessary to produce the required exudation must be stronger than in young and recent cases, where these changes have not yet occurred. One may however also occasionally find one of the latter cases in which the exudation, inflammation and usual tenderness is not developed by the quantity of No. 2 usually injected, and in these cases it is also recommended that the No. 1 fluid be substituted. While larger injections of No. 2 would have practically the same effect, causing a relatively greater amount of irritation, there is this objection; when the quantity injected is too large, the law of gravitation asserts itself, and the fluid, instead of remaining permanently at the desired point, gravitates either downward into the scrotum, or if the patient is lying on an operating chair with the head lower than the feet (as described later on), it may flow into the abdominal cavity. Neither of these circumstances would give rise to any reasons for alarm, as the fluid being aseptic, would do no harm, merely exciting an innocent inflammation, but not being part of the treatment, such irregularities are to be avoided.

Summarizing then, the difference between the fluids is practically a matter of strength. The same results will be attained by the use of either fluid if the dosage is regulated. No fixed rule for dosage can be given. Certain cases will be cured by the average injection of three minims, while others will require an average of ten. When an injection of ten to fifteen minims of Fluid No. 2 is not followed by the proper degree of reaction, it may be still further increased, or Fluid No. 1 resorted to and given in five to ten minim doses. If Fluid No. 1 be used in the beginning of a case, and the quantities injected do not produce too much inflammation, no change will be necessary. Fluid No. 1 can be adapted to the use of all cases, attention being given to dosage. No. 2 is recommended in children or in cases where small doses of the other irritate too much. As the physician

becomes familiar with the treatment, and bears in mind that the dose of any fluid, no matter what its composition, is to be regulated by the effect produced by former injections, he will have no trouble whatever, but he will be entirely guided by his good judgment.

Physicians who do not have the facilities or inclination to prepare fluids according to my formulae, can obtain either fluid, prepared according to the methods described, at the rate of One Dollar per bottle, containing one ounce of fluid. Sent prepaid by mail. . This quantity will be sufficient to treat six or more patients.

I claim no proprietary interest in either of my fluids, and any one possessing ordinary skill in compounding medicines can prepare them properly, due caution being observed in the purchase of the ingredients. My only claim is that when prepared by myself they are guaranteed to be accurate, clean, effective, and as reliable as pure drugs and careful attention to detail can make them. Less quantities than the above will not be sold, as the fluids are prepared in large quantities and immediately bottled and sealed.

DIRECTIONS FOR TREATMENT.

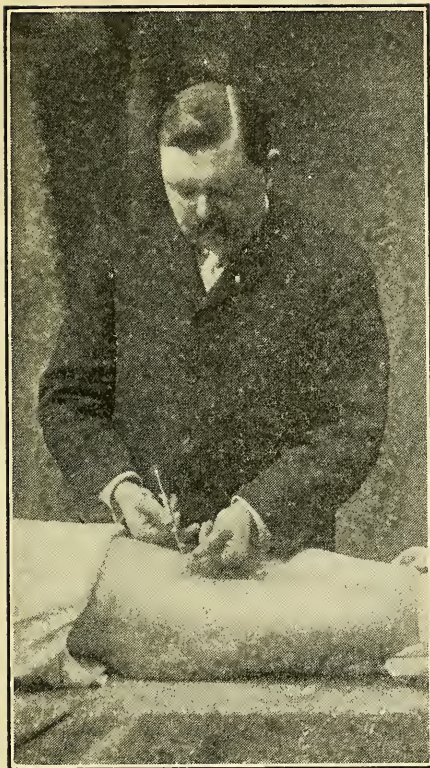
Technique of the Operation.

GENERAL DIRECTIONS.

First, if the patient is not already supplied with a well fitting truss, one that perfectly retains the hernia under all conditions and circumstances, procure one that will do so. If the patient does not already wear a truss, have him do so for a few weeks before beginning the treatment. If the hernia exhibits a tendency to protrude during the night while the patient is in bed, the truss must be worn constantly. If the day truss should prove uncomfortable at night, an elastic support may be substituted. If there is no such tendency, the truss may be removed after lying down, but it must be replaced before rising. Do not begin the treatment until the patient tells you that the hernia never comes down, as it will be useless to try to close the canal as long as the hernia occasionally descends and again opens and distends it. After the treatment is begun it is a good plan to have the patient wear a light support while in bed. This support may be either an ordinary elastic truss or a homemade appliance. A simple device of this kind can be made by sewing a lump of lead, half spherical in size, between two pieces of cloth, made to encircle the body, with an under strap to keep it in place. The lead can be molded in this fashion by pouring the molten metal into a dry cup and allowing it to cool. Place the round side inwards. I formerly did not insist on this detail, but experience has taught me that the procedure is a wise one. Patients, when informed that a truss need not be worn when in bed, are liable to form the opinion that as long as they remain in bed, whether in the upright or horizontal position, the truss can be laid aside. Of course the more intelligent patients will understand what is meant,

but many will interpret your directions literally. As an illustration, I will mention a case that gave me considerable trouble. I could get no clue to the secret until inadvertently the patient informed me that the hernia gave him "some trouble" while cohabiting. In this case, because he was in bed at the time, he followed my instructions and did not wear the truss. I now instruct all male patients to wear the truss when this act is performed.

TREATMENT. Place the patient in a reclining position, remove the truss and clean the pubes with some antiseptic solution. If the hernia shows a tendency to descend during this manipulation, tilt the chair or table backward sufficiently, raising the feet higher than the head, until the hernia slips into the abdomen. Now draw fluid into your syringe, exclude the air by elevating the needle and pressing the piston until a drop of fluid escapes without bubbling, wipe the needle clean of fluid, set the set screw on the piston to the amount you wish to inject, invaginate the canal with the forefinger of the left hand, introduce the needle through the pubic tissue into the canal with the right hand, and make the injection at the point indicated in the *special* directions. Remove the needle, massage the parts for a minute, replace the truss and let the patient go about his business. The operator, if right handed, should stand on the left side of the patient, whether operating on either a right or a left hernia. If left handed, the opposite applies. Before inserting the needle, grasp the integument with the forefinger in the canal and the thumb of the same hand and elevate them slightly. This allows a space between the finger and the floor of the canal, on which the cord and vessels lie, and prevents all danger of injuring them. Pass the needle in a lateral direction through the pubic tissues, directly beyond the end of the inside finger, until the needle has entered the canal. This can be determined by directing the point, now inside, toward the end of the finger. If correctly located, there will be nothing between the finger in the



THIS ILLUSTRATES THE METHOD OF GIVING THE INJECTIONS
IN THE TREATMENT OF HERNIA.

canal and the needle point, but the scrotum which was brought up with it. The prick of the needle can easily be felt on the finger of the operator.

After the injection has been made, withdraw needle, return the fluid remaining in the syringe into the vial, cleanse the needle by drawing a little alcohol through it and place it in either a solution of carbolic acid or a fresh and clean piece

of absorbent cotton. Before using the needle and syringe again, cleanse with alcohol in the manner just mentioned.

A short time after the injection has been made, the patient will experience a feeling similar to a bruise at the point at which the injection has been made, which will continue for several days. This is due to the irritation caused by the fluid and the resulting inflammatory action. This inflammation causes the exudation necessary for the healing process. The amount of inflammatory action differs in different persons, and it should be merely sufficient to cause a moderate amount of uneasiness, and not sufficient to incapacitate the patient. In giving the dosage of the fluid I shall specify *minims*, not *drops*. One minim of an alcoholic fluid is not the same as one drop, and it varies also according as to whether the fluid is dropped from a graduate or through needles of different caliber. According to the needle I use, one *minim* is equal to five *drops* as they fall from the needle. This is, however, unimportant. The piston of the syringe being graduated and being supplied with a set screw, the number of minims can be accurately ascertained. No matter which fluid is used, always begin with one minim, or even less, and note the result. Ask the patient to return in a day or two, and if there is no inflammatory action worth noting, repeat the injection, giving two minims, and again ask him to report in a few days. Be guided by the effect produced and repeat or not according to the condition of the patient. Never inject when there is inflammatory action present. In this manner the dose can be regulated, and when the quantity that causes the proper amount of soreness is ascertained, continue that dose until its effects are less marked, when another increase can be made. In the majority of cases, four to five minims will be sufficient to produce the desired action, and yet occasionally a person will be found in whom ten to fifteen minims have to be used in order to do this. If the inflammatory action is such that the patient cannot exercise freely and follow his usual occupation, the dose given was too large, and less must be given in

the future. Cases in which the inflammation has been unusually strong will be found well advanced toward the cure, after it subsides, which it will do after twenty-four to forty-eight hours. This is the compensation for the inconvenience experienced. Beyond the discomfort of the patient, there is no undesired effect. After the effects of one injection have worn off, another may be given, no matter whether it is in three days or two weeks. Instruct the patient to report as soon as the soreness has disappeared, when you will again treat him. No interference with the ultimate cure will be experienced if the injections are given at longer intervals than as indicated by the disappearance of the soreness, but the period in which the cure will be effected will necessarily be lengthened. Should sympathetic swelling occur in either the cord or adjacent structures, no alarm need be felt. Injury to the cord or vessels is impossible if directions for introducing the needle are followed. If it should occur through clumsy work at this point, and much swelling occur, treat as you would inflammation anywhere. I have never seen a case of this sort, but have heard of it through other writers.

In the FEMALE the same general rules apply, but invagination can scarcely be accomplished. In large herniae a manipulation that approaches invagination can be practiced, but in the smaller cases this is impossible. Here the round ligament is used as a guide for depth, and after grasping the integument with the forefinger and thumb of the left hand, pass the needle through it from above downward on a line with the body, so that after the needle has pierced the tissues and passed through them, the point will be located under the finger and thumb.

After the needle has been introduced, still elevating the tissues, raise the syringe so that it will be at right angles to the body, pointing directly downward. The injection should always be made where the protrusion first appears, and the needle should be introduced directly over this spot. This point should be marked with a blue pencil while the patient

is standing, so as to easily locate it while lying down. The round ligament can easily be located by its tough, cord-like touch.

The injection should be made at about the same depth as this ligament is felt. While women are not as easily treated as men, the operation is not at all difficult, and if properly injected, they will be cured in less time than a similar hernia in a man, as the hernial canal is usually smaller. Flabby abdominal walls render a cure more difficult and tedious.

After four to six injections have been made, or more in large and long standing cases, and the hernia has not been down during that time, and there is reason to suppose that the treatment has progressed favorably, a test may be made. Be sure to instruct the patient not to dare to make an effort to test himself during the treatment, but insist that he follow instructions in this particular explicitly. The manner of making a test is similar to the diagnosis of hernia. The first test should be made while the patient is lying down. Remove the truss and instruct the patient to cough. If no impulse is noted while in this position, the patient may rise and the experiment be repeated. Always press your hand firmly against the parts while the patient coughs for a test, so that in case there should be a weakness present, the hernia would not descend and thus do considerable damage to the adhesions which had formed. If no impulse is noticed while patient coughs while standing, the treatment may be discontinued temporarily, but the patient instructed to continue wearing his truss for a month or more, and report at the end of that time. The night support may now be discontinued. After a month the patient is again tested, and if no impulse is felt, the case may be discharged with directions to wear the truss for another month while at work, if a laboring man, but to remove it while about the house or when not at work. After that time it may be discarded altogether. If the patient's occupation is of a light nature,

the truss may be discarded entirely after wearing it a month after the test.

In case an impulse is noticed when the test is made, the treatment must be continued as before, and occasionally tested until the desired results are obtained.

After a few injections are made, small nodules will be noticed to be forming in the canal. This is as it should be, and represents the new tissue formation which is taking place and which is necessary to the closure of the canal. In large herniae, where the canal is more distended and the surface much larger, two injections may be given at one visit, one nearer the outer margin of the ring, and the other more toward the inside. Young and middle aged persons make the best subjects, although persons well advanced in years can be cured if sufficient time is allowed. Old persons usually require larger doses than others on account of their tissues not being as highly vascular and active in producing the exudate as in younger persons. Infants and children under five or six years of age are usually unsatisfactory patients, as they cannot describe the degree of inflammation present, they usually cry and struggle during the treatment, which causes the hernia to descend, remove or disturb the truss if not continually watched, and as a rule cause more vexation than their parents are willing to pay for. If you should accept children for treatment, do not fall into a common error and treat them for half the usual fee, as after a short experience you will regret it. If I should ever undertake to cure a child of the age given, my charges would be a certain fee per treatment and no promises made. Children of the ages of eight to ten years are excellent subjects, and are usually rapidly and perfectly cured.

In *Double Hernia*, each side may safely be treated at each visit, the soreness resulting being no more than if only one side is injected.

Some physicians advise the use of an anesthetic before introducing the needle, usually cocaine, but this is entirely unnecessary. The pubic tissues are not sensitive, and in

persons with hernia are usually thinner than in sound persons. Use a sharp needle and introduce quickly and none will complain of the very slight pain caused by the prick of the needle. Others recommend the addition of cocaine to the fluid. This may be necessary with some fluids, but I have never heard any one complain of more than a slight burning, and not more than can easily be borne for a few minutes. Again, the use of cocaine combined with the fluid is not theoretically nor practically of value. Before the cocaine could anesthetize the membrane, the irritants would make their presence felt, as cocaine requires a short time in which to act. If cocaine is ever used inside, it should be injected a minute or two before the fluid. I have no use for it and do not advise it. With either of the fluids given here it is unnecessary. A hot water bag before and after injection, is also sometimes recommended. It is applied directly over the seat of the hernia after the injection has been made, and allowed to remain five or ten minutes.

SPECIAL DIRECTIONS.

Read Carefully.

In order that these directions may be fully and clearly understood, a brief outline of the anatomy of hernia will be given. A thorough familiarity with this subject is essential for the correct diagnosis and proper treatment of hernia.

OBLIQUE INGUINAL HERNIA.

This variety of hernia is sometimes called Indirect or External Oblique. In this variety the intestines escape from the abdominal cavity at the internal ring, where the spermatic cord passes out of the abdomen, taking the same course as the cord along the inguinal canal, through the external ring and into the scrotum. When a hernia passes through the external ring it is termed a complete hernia, if not, an incomplete. The external form of hernia is so called because it passes, in its descent, to the outer side of, or

external to the epigastric artery. The cord is always behind the hernia.

DIRECT OR INTERNAL INGUINAL HERNIA.

In this variety the protrusion passes directly through the abdominal walls and descends through the external ring into the scrotum. It is called internal, because it passes, in its descent, to the inner side of the epigastric artery.

In some cases this form of hernia breaks into the inguinal canal and passes down through it. In the majority of cases, however, it passes directly through the tissues and into the external ring. If a direct hernia passes into the inguinal canal but does not pass through the external ring, it is called an incomplete direct hernia. Direct hernia is not near as frequently met with as the oblique form, the percentage being probably one in five or eight. The differential diagnosis between the two varieties can be made by the location of the point at which protrusion is first noticed, being more external in the oblique form.

The direction in which a direct hernia descends is always more directly downward, or may even be slightly outward from the point at which the protrusion is first noticed, while in the oblique, it is always downward and inward pointing toward the pubic bone. Bearing in mind the direction of the inguinal canal, the diagnosis can easily be made. When the two forms exist in the same person, as I have seen several times, the diagnosis is likely to be difficult, unless this possibility is borne in mind.

Either of the other varieties of hernia are readily recognized and no special reference need be made to them here. A careful detailed study of hernia will materially benefit any practitioner who wishes to make a success of the injection method of treatment.

WHERE TO DEPOSIT THE FLUID.

In *Oblique Hernia*, invaginate the canal with the left forefinger, as directed in the general directions, carrying the end of the finger well up to the internal ring, where the hernia escapes from the abdomen. Introduce the needle as directed before, about half an inch below this point, and after the needle has been passed through the tissues, direct its point upward toward the internal ring. As the finger in the canal is elevating the tissues, the needle can be turned in this manner without touching any of the contents of the canal. Deposit the fluid as close to the internal ring as possible, rotating the needle somewhat during the expulsion of the fluid, so as to distribute it well. When the internal ring cannot positively be located, as is the case frequently in large herniae, deposit the fluid well up in the canal, where the protrusion first appears.

In *Direct Hernia*, if the breach in the abdominal wall can be outlined, deposit the fluid, well distributed, in the tissues just below this point. As no canal can be determined in this form of hernia, it usually makes its first appearance at the external ring, and when the location of the breach cannot be determined, deposit the fluid just inside of the external ring. More judgment is necessary to treat this variety of hernia than any other, as no two cases are exactly alike. Bear in mind the principles of the treatment; to cause adhesions between the tissues through which the intestines escape, and deposit the fluid accordingly.

In *all* cases, begin the treatment at the highest point that shows weakness. If this rule is not followed, the lower portion of the canal or course of the hernia will become closed and cannot be invaginated, thus rendering further treatment impossible. As the upper portion closes, make the injections lower down.

Femoral Hernia. The injection treatment of hernia was first only advocated as a cure for Oblique or Direct Hernia, but its well known principle has been successfully applied to the treatment of Femoral Hernia, also. Accurate instructions for treating this variety cannot easily be given, as the characteristic features of different cases vary. Any one who has had experience in treating other forms, and who will exercise judgment, will be able to treat these cases by following the lines of the general principles of the method, making the injections always close to the point at which the protrusion first appears, and gradually closing the femoral canal through which it descends. Retention, is of course, essential.

Umbilical Hernia. In this form of hernia no canal exists. A breach in the abdominal wall, in the vicinity of the umbilicus, allowing the protrusion to escape. Sometimes it burrows under the skin and descends to some extent. A cure of this form of hernia necessarily implies an approximation and connection of the edges of the breach, a process impossible without surgical interference. Some of these cases can, however, be relieved to some extent, by the following procedure: A hard rubber spring truss having a pad large enough to suit the case, with a button large enough to afford good retention, should be obtained. Injections should be made, two or three at each visit, around the edges of the breach, and repeated as in other forms of hernia. By this method the skin and muscles which are often detached, can again be united, and the opening which permits the hernia to descend between them is thereby closed.

In these cases there is usually an abundance of loose, flabby, skin and tissue, which often defeats all attempts to improve the condition.

The operation of dividing the skin and bringing the edges of the ruptured muscles into contact, and stitching them together, is one that requires but little surgical ability, and the results are usually such that will warrant it. A firm support should always be worn.

THE RAPID METHOD OF CURE.

By repeating injections as often as the sensitiveness of the patient will allow, any form of inguinal hernia can be cured in a comparatively short time, varying from one-third to one-half the time required by the regular method. The procedure is as follows:

The patient must be willing to desist from all work or exercise for a period of from ten to twenty days, according to the case, and for the greater part of the time must remain in a reclining position.

Repeat the injections as often as the patient's condition will allow, giving him to understand that he must expect a considerable degree of soreness. The injections are usually made every two or three days, and the truss must be worn constantly, day and night. The pressure thus given will keep the parts in contact and will thus cause a rapid closure of the canal. Some cases will not allow an injection every two days, on account of too much inflammation, and it should only be repeated when the patient tells you that although there is a considerable degree of soreness present, he will be able to stand a little more. Beyond the discomfort of the patient there will be no unpleasant features, and as in the regular method, no danger.

After treatment has been thus continued for ten to twenty days, according to the progress of the case, the patient may resume moderate exercise, still wearing the truss, and the treatment continued as may be necessary. After this period of treatment, tests may be made, as in the other method. Before making the tests, it is well to wait three or four days without an injection, to allow the inflammation to subside and the adhesions to become firm. Continue the treatment as directed until no impulse is felt on coughing. Preliminary tests may be made at any time while the patient is lying down. The standing test is the one referred to as deferred until the inflammation has subsided.

After the treatment is discontinued, the patient should wear the truss as directed in the regular method, and discard gradually.

In persons in whom difficulty is experienced in retaining the hernia, a week's treatment by this method will usually result in success in this particular, when the treatment can be completed by the regular method.

Careful attention to these directions will be productive of but one result, a complete and permanent cure in all curable cases. A little experience will make any physician an adept in the application of the treatment, and will be productive of the highest degree of success.

A WORD OF ASSURANCE.

If there is any one question asked more frequently by physicians who are interested in this method of curing hernia, than any other, it is this: Is there no danger of Peritonitis, Orchitis, Cellulitis, injuring the Epigastric Artery, etc.? My answer is candidly and positively, "No, None Whatever." Not a single unfavorable symptom has ever occurred in my practice, nor has any been reported to me by the many physicians who have used my fluids. The reports of such accidents that are sometimes seen in medical journals are the result either of an unsafe fluid or clumsy operating. I have been treating hernia seven years, and have not in a single instance been called to account for producing more than a moderately severe degree of inflammation. As before mentioned, this will occur when too large doses are injected, but I have never prescribed as much as a piece of ice to relieve it. My only advice has been, "take a rest if you feel like it, it will be all right in a day or two."

These strong inflammations always benefit the patient a great deal, and calling attention to this will usually be sufficient compensation to them for their temporary inconvenience.

OTHER INJECTION FLUIDS FOR HERNIA.

The great interest that is being manifested on all sides in this successful method of treating hernia, naturally results in a number of different compounds being employed as agents to produce the irritation and inflammation necessary to effect a cure, many of which are doubtless of value. A number of the better known formulae will here be given. These have been obtained from medical journals and from physicians who originated them and used them in their practice. Such comments as suggest themselves are appended thereto.

DR. SOUDER'S FORMULAE.

In a series of articles published by Dr. Souder, the following formulae are given.

Fluid No. 1.

℞ Zinc Sulphate..... gr. ij.
 Creasote ℥ iij.
 Fld. Ext. Hamamelis.
 Glycerine āā ℥ xxx.
 Mix. Inject 2 to 4 minims.

Fluid No. 2.

℞ Fl. Ext. Quercus Alba..... fl. ʒ iv.
 Reduce by heating to..... fl. ʒ j.
 Alcohol fl. ʒ j.
 Acid Carbolic..... ℥ ij.

Mix. Inject 1 to 3 minims. Repeat when reaction has disappeared. This formula has been discarded as it causes too much pain.

Fluid No. 3.

R Guaiaicol.

Beechwood Creasote.....āā ℥ ij.

Zinc Sulphate..... gr. ij.

Fl. Ext. Hamamelis..... ℥ xxx.

Glycerine ℥ xxx.

Mix. Inject 2 to 3 minims.

This fluid is the same as No. 1, with the addition of the guaiacol.

It is the formula now used by the doctor, and the one on which he depends in the majority of cases.

THE HEATON FORMULA.

R Ext. Quercus Alba..... gr. xiv.

Fld. Ext. Quercus Alba..... fl. ̄ j.

Morphia Sulphate..... gr. ij.

Mix and heat in a capsule over a sand bath until a homogeneous solution is formed.

Dr. Heaton's formula is sometimes given in which four grains of morphia sulphate are added to the above quantity. The quantity injected varies from five to fifteen *drops*, as may be required.

After Heaton came Warren, who employed this fluid.

R Fl. Ext. Quercus Alba..... ̄ viij.

Reduce to ̄ ij by heat.

Alcohol, 90 %..... 3 vi.

Ether Sulphuric..... 3 iv.

Morphine Sulphate..... gr. iv.

Mix. Inject 15 to 20 minims in small and recent herniae, and 25 to 50 minims in large or old herniae.

"This fluid will cause a marked reduction of pulse and temperature, and it may be necessary to put a hot water bot-

tle to the patient's feet. This reduction may last as long as forty-eight hours and give a decided advantage in obtaining a more local effect of the irritant." Dr. Souder used this combination on six patients and all suffered intense pain for days thereafter. The use of a fluid that causes such disastrous results is entirely unwarranted.

THE FIDELITY FLUID. I have on several occasions seen this fluid stated to be Fluid Extract of Ergot. Any physician who has ever seen this fluid, could not possibly make this assertion. It is no more ergot than tincture of green soap. The following formula was given me by a physician who obtained it from one of the operators of the company, with the assurance that it is the correct formula. When compounded, it makes a fluid identical in appearance and odor, with the genuine.

℞ Acid Carbolic..... 95 %
 Glycerine.
 Alcoholãã p. e.
 Tr. Iodine.....q. s. to color
 to the color of sherry wine.

DR. WALLING'S FLUID.

This fluid is one of those for which the formula is given in such a manner that it cannot be prepared without further instructions.

℞ Complex Salts of Aldehyde..... 30 %
 Iodo-ethylate of Guaiacol..... 30 %
 Sulpho-tannate of Zinc..... 20 %
 Free Guaiacol..... 5 %
 Beechwood Creasote..... 15 %

The following note follows the formula: "These rare and expensive chemicals are separately prepared and then combined in strict conformity with their respective affinities and dosage, and dissolved in an antiseptic medium."

DR. ROBINSON'S FLUID.

R	Acid Carbolic, 95 %	fl. 3 ij.
	Glycerine, C. P.	fl. 3 iv.
	Tr. Iodine, U. S. P.	fl. 5 ij.
	Potassium Permanganate	3 j.
	Caramel	gr. xv.

"Mix. First add the glycerine to the carbolic acid, after which add the iodine and caramel, and then the potassium salt in crystals. Allow it to stand for about three weeks, shaking daily. At the end of this time it is ready for use. Inject eight *drops* at a time."

In this formula two points that are neither pharmaceutically correct nor therapeutically indicated, stand out so prominently that they demand criticism. The first is, the addition of potassium permanganate to an organic compound. This salt of potassium is such a strong oxidizing agent that it undoubtedly impairs the value of an otherwise plausible formula. The second is, the addition of caramel. What indication is met by the addition of burnt sugar to a formula for this purpose is more than can be imagined. Caramel is used for only one purpose in pharmacy, as a coloring agent. The color of a hernial fluid is certainly immaterial to its effect. Giving the dose in drops is also faulty.

O. E. MILLER'S EXTERNAL ASTRINGENT. The O. E. Miller Hernia Cure Company were among the first to revive this method, some ten or fifteen years ago. Their injection fluid was the same as the Heaton formula, while externally they used a preparation known as "External Astringent." It was given to the patient for use every night. The formula was furnished by a physician who conducted one of the offices of the company. He states that he "made gallons of it."

EXTERNAL ASTRINGENT.

R	Tr. Iodine Comp.	
	Soap Liniment	ââ p. e.
Mix.	On standing for a week or two, with frequent	

shaking, this mixture loses its iodine color and becomes a clear fluid at the bottom with the oily substance in the liniment at the top. When shaken, it becomes milky in appearance.

DR. PROVOST'S FLUID.

℞ Guaiacol, pure..... ℥ xxx.
 Zinc Sulphocarbolate..... gr. x.
 Creasote, Beechwood..... ℥ xxx.
 Glycerite of Tannin..... q. s. ad. fl. ̄ j.

Mix. Reduce to 50 % with alcohol and inject four or five drops of the weakest solution, gradually increasing to twelve drops. Increase strength of solution according to reaction.

There are hundreds of other formulae floating about medical journals, many of which are similar to those already given, while others do not commend themselves sufficiently to give them room. With this collection of formulae, there is surely no necessity to wish for any more. A few others are however given under "Secret Systems Exposed."

TRUSSES.

No matter how thoroughly the subject is understood; no matter how carefully the treatment is given; no matter how much is claimed for the injection fluid used, hernia cannot be cured by the injection method unless the patient is properly fitted with a suitable truss. Three-fourths of the unsuccessful or unsatisfactory results following this treatment can be directly traced to lack of attention to this important detail.

Fully one-half of the trusses in daily use do not fit the persons wearing them. Careful observation is the basis of this assertion, and it can be verified by anyone desiring to do so.

This condition of affairs is due to several causes; the chief of which is the general custom of physicians to refer their ruptured patients to instrument dealers and druggists, many of whom are no more capable of fitting a truss to a person properly, than they are to perform the operation for the radical cure. Another cause is due to an unaccountable idea that some ruptured persons have, that hernia is an evidence of loose morals or that it is due to some immoral action on their part. This portion are unwilling to purchase a truss personally, but order one by mail and simply *wear* it, whether it fits or not.

Mail order houses advertise trusses; department stores sell them over the counter and fakirs carry them through the country. In the majority of instances the "fitting" is done by the person who intends to wear it. I am not one who would make the claim that none but a physician can properly fit a truss, for any intelligent person can in a reasonably short time become proficient in the art if he applies himself, but how often is this done? The principal idea is to sell the truss, and if it does not fit, sell another one. Being a physician does not necessarily imply that one can fit a truss properly, for unless some attention has been

given to the subject, the degree of "M. D." carries with it no guarantee whatever.

WHY TRUSSES FAIL.

Trusses fail to retain the protrusion properly for various reasons. It may cause pain to the wearer, necessitating a frequent shifting of the offending parts, thus permitting the hernia to protrude more or less, with corresponding irritation.

It may fail to retain the hernia on account of being of improper size, or the adjustment may be faulty.

The pad may be too small and practically enter the opening and allow the hernia to protrude on the side of it. The French truss, with its strong spring of steel and a small convex pad is particularly apt to be faulty in this respect.

The pad may be too large and cause undue pressure on other parts, principally the cord, and cause hydrocele of the cord; or on the arteries and interfere with the nutrition of the testicle.

The pad may rest on the external ring and allow an incomplete hernia behind it.

SELECTION OF PAD.

The shape of the pad should conform to the nature and size of the opening. Whether round or oval, I prefer either a flat, slightly convex or full convex pad. I have never been able to see any advantage in the concave pad, as recommended by some, nor with the pneumatic collar around the edge of the pad. The flat pad is less satisfactory than the convex, yet in certain cases of direct hernia, I have found this shape quite satisfactory. The selection of the properly shaped pad is a matter upon which a considerable amount of good judgment can be exercised to advantage. Explicit directions to suit every case cannot be reasonably expected, yet I will endeavor to mention some of the leading indications, which may be borne in mind.

In case a hernia is difficult to retain, even when properly

fitted, and consequently requires a strong spring, a pad should be selected that is not too hard. In these cases a celluloid, hard rubber or uncovered wood pad will probably irritate. A spring pad covered with soft kid or chamois, or a water pad is best suited for this class of hernia.

Persons employed at trades that soil the clothing and body, such as machinists, moulders, mill-workers, miners, etc., should, if possible, be supplied with either a wood, rubber or celluloid pad, for which a home-made covering can be made, which can be thrown away when soiled. The spring or water pads can be similarly protected if the harder pads cause annoyance. In this manner the pads can be kept clean and their usefulness extended.

SIZE OF PADS. When the Hernia is small and not hard to retain; a pad should be selected that is large enough to furnish good marginal pressure, so as to avoid its entrance through the opening and aggravate the hernia. This does not necessarily call for a large pad, but one just large enough to accomplish its purpose. As the protrusion is slight it requires no more than the ordinary convexity.

In the large majority of cases no particular attention need be paid to the size of the pad used, as the pad usually supplied with standard trusses meets the necessary requirements. It is only in the larger herniae, when the regular pads prove insufficient, that a special pad will be called for. The automatic spring pad, fitted with an oval collar of leather covered rubber, and a separate oblong hard rubber pad in the center, which adjusts itself automatically to different degrees of pressure by means of an internal coil spring on which it is mounted, is perhaps the most desirable pad for general use.

In unusual cases, a good rule to remember is: The larger the breach in the abdominal walls, the larger and more convex should be the pad. A large opening is always indicated by the freedom with which the hernia descends, or the forcible and prompt impulse.

I have frequently been able to furnish complete and perfect retention by the use of a double elastic truss, worn for a single hernia, and fitted with only one pad. The strong leather support with which double trusses of this kind are equipped being just the proper support.

Persons with thin abdominal walls do not require as much convexity of pad as those who are stout and fatty in those parts, but unless in the latter cases, no distinction is made.

The prevention of chafing is frequently a point that requires attention, although with the form of truss that I have used most frequently, this annoyance is reduced to the minimum. The proper adjustment of the wire spring which can be easily bent and made to conform with the curves of the body, is the first essential, and the other is to keep the pads firm in their proper position by the proper adjustment of the bands.

The regular equipment of trusses, according to order, will in most cases prove satisfactory if properly adjusted. It is only in the unusual cases that special equipment is required, and it is these that often tax the ingenuity of the best and most expert fitters.

CANCER.

TRUE CANCER; AN EPITHELIAL NEOPLASM.

For some unknown reason the treatment of epithelioma by the application of caustics and other local applications, has for many years past remained, with a few notable exceptions, in the hands of irregular, non-graduate and ignorant practitioners. Persons without a trace of education or information on any other subject, and not infrequently with but a superficial knowledge of cancer and its treatment, have nevertheless so persistently and I may say, so successfully used this method of treatment, that it is to-day known in every village and hamlet of this and other countries, and is at last receiving recognition by college professors, and is indeed being taught in some modern schools of medicine. It is to be hoped that this treatment will commend itself to all progressive physicians and that by its intelligent use we may obtain even more information of a positive nature in regard to the cause, the painless treatment and the absolute cure of this interesting disease.

ETIOLOGY.

In regard to the etiology of cancer much has been written but little is known. That its primary cause is an irritant admits of no doubt, but what the nature of the irritant that causes the local new growth of the epithelial cells may be, we know no more now than was known half a century ago when its pathology was demonstrated. The untiring and often heard of searcher for microbes has at least a dozen times proclaimed to the world that at last he has discovered the varmint, and that henceforth all that will be necessary to cure cancer will be to locate and exterminate him, but all of

these discoveries have faded into the mere suspicion of an idea, in the light of unbiased, careful and intelligent investigation. That the primary cause of cancer will sooner or later be discovered, cannot be doubted, but until then, the less said the better. Other and more essential points will therefore be taken up and dwelt upon; predisposing causes, pathology, diagnosis and treatment.

AGE.

From the observation of physicians who have made the study and treatment of cancer a specialty, we have abundant proof that the majority of cases of cancer are found in the aged. This leads us to believe that the senile changes which take place in the tissues and epithelium with advancing years have some relation to the growth of the neoplasms under consideration, but further than this nothing can be said with certainty.

HEREDITY.

Not infrequently do we find that cancer occurs more frequently in families in which it has once appeared, although persons not related, but occupying the same residence, have been known to develop cancer in succession, thus rendering it necessary for us to consider the liability of direct contagion, as cancer is undoubtedly capable of being transmitted by contact. Thus when it occurs successively in families, each and all using the same linens, dishes, utensils or implements, heredity cannot be said to be entirely substantiated.

LOCALITY.

The frequency with which cancer occurs in a portion of several states in the central part of the United States, has given that locality the name of "The Cancer Belt," but as in other instances, we cannot explain the relation which climate, soil or location bears to the primary cause of the disease.

TRAUMATIC CAUSES.

A popular idea obtains that cancer will result from traumatic or constantly irritating causes, (and this is in fact in line with the best information we have, even though the nature of the necessary irritant is unknown,) and it is very commonly supported by indisputable facts. Its frequency on the lips or tongue of the pipe smoker, particularly the short stemmed one; on the cervix of the uterus after laceration; or appearing after warts or other cutaneous growths have been irritated or forcibly removed, can surely not be satisfactorily explained by terming it a coincidence.

Numerous other and largely theoretical causes have at various times been brought forward, but which have never been accepted as feasible. Among the most notable may be mentioned the theory of Cohnheim, in which he claims that cancer is caused by the stimulation, late in life, of cells which have retained their embryonic condition, and the parasitic protoplasmic body found in cancerous growths by Foa and Plimmer, but which proved to be degenerate products of the disease instead of its cause.

PATHOLOGICAL OBSERVATIONS.

The term Cancer, like Dyspepsia and Catarrh, is one that is much misused. Prior to the pathological demonstrations of malignant growths, after which they were classified and re-named, all malignant growths were termed Cancer. Cancer, strictly speaking, is always an epithelial neoplasm; a new growth of epithelial cells, although in its progress and growth more or less connective tissue is included. In structure these growths are composed of pegs or columns of cells, which infiltrate first into the connective tissues and later into the underlying structures even including bones. The epithelial ingrowths contain globular masses of flattened cells, the so-called cell nests or epidermic pearls, while the surrounding fibrous stroma is usually infiltrated with small cells. When the quantity of connective tissue included in the growth is large, the growth will be relatively more solid

and firm. The growths that are softer are usually of more rapid growth and do not contain as much connective tissue. As text books on the subject of pathology are convenient to all practitioners it will be unnecessary to cover this point to any greater extent, and we will pass on to two more essential points, Diagnosis and Treatment.

DIAGNOSIS.

Any cutaneous or mucous surface covered with squamous epithelium may be attacked by cancer. When the disease attacks the skin, the parts most commonly involved are the nose, lip, penis, scrotum, vulva, or the anus. The mucous surfaces most commonly involved are those of the tongue, gums, palate, larynx, alimentary canal, bladder, os uteri or in fact any organ or part thereof which is composed of epithelial cells.

VARIETIES.

Three distinct varieties of epithelioma are met with: The Superficial, Deep-seated and Papillomatous.

THE SUPERFICIAL VARIETY

is sometimes known as Discoid Epithelioma or Rodent Ulcer. As its name indicates it begins and exists for some time, as a flat, superficial, firm, reddish or yellowish tubercle, or an aggregation of such, as a warty excrescence or a localized degenerative patch. Sooner or later, sometimes after months or years, the surface becomes excoriated and a yellowish or brownish crust appears. This excoriation gradually spreads and develops into a superficial ulceration which slowly increases in size. The ulcer usually has an uneven cauliflower-like appearance, base and margins indurating, but with no evidence of surrounding inflammation, secretes a thin watery fluid which dries into a firm adherent crust, and obstinately resists the action of such treatment as usually cures common ulcers and sores. When the nearest lymphatic glands are enlarged the diagnosis is practically certain. The general health usually remains as usual and the presence of a superficial epithelioma may cause but little trouble, unless, as frequently is the case, it develops into the deep-seated variety.

THE DEEP-SEATED VARIETY.

may develop from the superficial form or may begin as a tubercle or nodule in the skin. A typical growth of this nature will appear as a reddish, waxy, shining tubercle or nodule, highly vascularized and more deeply seated than the former variety. Deep-seated ulceration takes place which enlarges in all directions, the edges being everted as a rule, with an atrophic center which increases in depth and invades muscle, cartilage and bone. It bleeds easily and gives rise to considerable burning pain. Its secretion is a scanty, pale yellowish purulent fluid of a decidedly foul and decaying odor.

The neighboring lymphatics always enlarge and frequently break down and suppurate. If left alone it pursues a progressive course and death eventually ensues from inanition, septicaemia, hemorrhage, or involvement of the vital parts.

THE PAPILLOMATOUS VARIETY.

is usually a last stage of either of the other two forms or may begin independently as a papillary or warty growth. It presents an ulcerated, fissured and papillomatous surface, bright florid color, is very vascular and bleeds easily. Pain is usually present in a greater or lesser degree. It discharges a dirty looking, foul, viscid, irritating fluid which dries into crusts. Lymphatic glands are involved and frequently break down. It terminates in death from sapremia or exhaustion.

The form of cancer that is known as Carcinoma Cutis, while a superficial growth, and liable to occur as a primary affection, is but seldom met with as such, but more frequently is secondary to cancer of the female breast or of the internal organs, and is therefore largely without the domain of treatment by this method. Paget's disease of the nipple has also recently been classed among these growths, although it resembles eczema very much, and has been termed an eczematoid epitheliomatosis.

The diagnosis of cancer of the skin is to be differentiated from the following: from syphilis by the history, dura-

tion, character of the base and edges, slow progress, character of the discharge and in doubtful cases by treating for syphilis as a therapeutic test; from warts or warty growths it can be differentiated by the discharge and tendency to crusting, break down and ulcerate; from lupus by the peculiar and multiple deposits of this disease, the tendency to scar formation and its frequent beginning in early life.

TREATMENT OF CANCER.

Cancer Specialists have always claimed and attempted more than they could reasonably expect from the caustic treatment, and it is on this account that this eminently successful method of treatment has not received the recognition which it so richly merits, if indeed it has not been responsible for the disrepute in which it is held by many physicians.

The caustic treatment of cancer is applicable to all varieties of epithelial neoplasms, providing their anatomical location is not such as to preclude the practicability of applying the same. It is not applicable and should not be employed in malignant growths of great size, or which involve the vital parts, the removal of which could only be accomplished at an unwarrantable risk to the patient and professional reputation. It is the indiscriminate application of this method that is accountable for the lack of confidence in it which is so apparent on all sides.

In properly selected cases, intelligently and carefully applied, the caustic method of treating cancer will effect a large percentage of cures, and has the advantage of appealing to persons who justly dread the knife, produces no shock, requires no anesthetic, is free from danger, often causes but trifling pain and is highly remunerative to the practitioner.

Cancer of the skin or mucous membrane, being a local disease except in its last stages, can be cured by local treatment, although in many cases a constitutional remedy is advantageous as a corrective of any systemic disease which may be present and possibly have an influence upon the growth.

There is ground for the belief that certain drugs exert a beneficial influence over malignant growths, even though their action cannot in all cases be depended upon. In cases in which the disease spreads slowly and in which there is no immediate danger to be feared by delaying active treatment, internal medication will at least do no harm.

ARSENIC

is probably the principal remedy that has been advocated as a constitutional remedy for cancer, being recommended by Lassar, who however also used in connection with it a paste known as Lassar's paste, formula of which is given later.

CHELIDONIUM MAJUS.

is recommended by a number of physicians who have devoted considerable time to the study and treatment of cancer, and it is still under observation.

While not willing to assert that this drug will ever become a recognized remedy, constitutionally, for cancer, it is encouraging to be able to state that the opponents of constitutional treatment are not yet willing to assert that it does not benefit certain forms of the disease.

LOCAL TREATMENT is the only method at present perfected upon which we can place dependence, and of this there are several forms.

The surgeon will naturally find recourse to the knife and claim that excision is the only means of cure. How uncertain and unsatisfactory this treatment is, is too well known to be entitled to further comment.

Let it suffice to say that no human power can ascertain the degree of infiltration that has taken place, and when these growths are thus removed there is nothing to guide the operator as to the amount of tissue he shall remove, and he either removes too little and thus allows some of the neoplasm to remain to again develop, or he removes more than is necessary and thereby subjects the patient to risk, excessive shock and subsequent disfigurement.

THE THERMO-CAUTERY AND GALVANISM

have their advocates, but this method is open to the same objection as excision, as the operator cannot differentiate between healthy and diseased tissue.

THE X-RAYS.

Judging from the amount of space given to articles in medical journals on the treatment of epithelioma and other malignant growths by means of the X Rays, there would be some ground for the belief that much good can be accomplished by this new treatment. It is a subject too extensive for consideration here, and attention is merely directed toward it.

ALCOHOL

injected in and around cancerous growths, seems to exert a good influence over these growths and many cures are reported. 35 to 50 % solutions are injected into the surrounding tissues.

CAUSTIC REMEDIES.

As a softening agent and for the removal of the superficial layers of epithelium, Salicylic Acid is a valuable agent. It may be employed either pure or in a mixture with starch, in powder form, or as an unguent, prepared with vaseline. If this is not used as a preliminary, the surface of the cancer should be scraped with a curette until slight bleeding occurs. After this has ceased the caustic can be applied.

NITRATE OF SILVER

has frequently been mentioned as a caustic for the treatment of cancer but its action is too superficial and does not destroy the deeper structures, in fact it frequently rather stimulates the growth than retards it. It is of no value.

LACTIC ACID

is a remedy that does not attack normal tissues but it is at best only a feeble caustic and is not by any means reliable.

SULPHURIC ACID

is recommended by some but it has the disadvantage of destroying healthy and diseased tissue alike, an undesirable feature. It is also extremely painful.

NITRIC ACID

is better and superficial growths have often been successfully removed by its use. It should be applied with a glass rod.

PYROGALLIC ACID

has been much used and with considerable success. It is best adapted to superficial growths. It may be applied in powder form or in the form of an ointment with lard, in strength of twenty-five to seventy-five per cent. Curetting of the surface should precede its application. It is but slightly painful and does not attack healthy tissue. An application, when made, should be allowed to remain for a week or more and a fresh one applied until the desired result is obtained. It is of no value in deep seated and largely infiltrated growths.

CHLORIDE OF ZINC.

This is one of our best remedies and one which has been advocated for many years. It is effective without a doubt and produces a clean slough and there is no danger of constitutional poisoning. It is not the least painful remedy that can be employed but its curative action admits of no doubt.

CAUSTIC POTASH

is especially adapted to use when cancer involves or appears on mucous surfaces. It is best applied in liquid form by means of a glass rod, following its application immediately with one of dilute acetic acid. A slough forms, which extends into the healthy tissue, but leaves a clean healthy ulceration which heals without difficulty.

ARSENIOUS ACID.

In arsenic we have the best caustic with which we are at present familiar. It is applicable to all cases of cutaneous cancer, whether superficial or deep. Its action is not severely painful and can usually be borne without any or only small quantities of opiates. Its action is strictly selective, in that it acts only on the carcinomatous growth, never attacking or damaging healthy tissue, and seems to exert the proper degree of caustic action needed for the destruction of the growth. It is never absorbed although used in large quantities and over large surfaces.

The remaining scar is usually insignificant and if the growth removed was small it is frequently impossible to locate the site thereof a short time afterward. The surface of the growth should always be curetted before applying arsenic as its action on unbroken skin is slow and tedious. When the growth to be removed is larger than four square inches it is advisable to treat only part of it at one time, in order to limit the inflammatory reaction which results. The application of the caustic should always extend at least one-half to one inch over the healthy tissue as infiltration usually extends that distance into it.

The surrounding tissues will swell considerably during the action of the caustic, but this need cause no concern whatever, as it will subside in a day or two. Should the eye be closed by swelling, when treatment is applied to the face, no alarm need be felt. The eye will not be injured. It is also well to bear in mind that as infiltration always extends into the healthy tissues for some distance, that the slough that will be loosened will be considerably larger than the original growth. No healthy tissue will however be removed and healing of the ulceration usually proceeds uninterruptedly under ordinary care. Regarding the treatment of skin cancers with arsenious acid, used in the form of a paste, usually known as Marsden's paste, Prof. John A. Wyeth, M. D., said in a lecture delivered at the New York

Polyclinic, "If I had a superficial epithelioma develop anywhere on my body where I could use Marsden's paste, I would prefer that method of treatment to the knife. If the disease had existed so long that the paste alone could not be relied upon, I would prefer to have the malignant process first cut or scraped away, and then have the paste applied. In this way we get more satisfactory results than by any other treatment I know of."

The formula of Marsden's paste is sometimes seen in slightly different proportions, but when seen in the weaker forms the formula is usually intended to be applied to the tender surfaces, as the lip, anus, glans penis, etc. Sometimes morphine is added, sometimes cocaine. The following formula is the one preferred by Prof. Wyeth and given by many others:

R	Acid Arsenious.....	5 ij.
	Powd. Acacia.....	5 j.
	Cocaine Muriate.....	grs.x to xvij
	Mix.	

Add a small quantity of water and rub into a paste to the consistency of rich cream. The paste should always be freshly prepared and spread on a piece of rubber plaster and applied as soon as the oozing of blood from the curetting has ceased. It should be allowed to remain from eighteen to thirty-six hours, when if required another fresh application can be made. When a cancerous growth has been thoroughly and sufficiently cauterized by this method, on removal of the plaster the neoplasm will be found to be black and necrosed, and surrounded by a swollen and inflamed area. A flax seed poultice is then applied and continued until the slough separates. After the slough separates, if any cancerous tissue remains not necrosed, or if the hard nodular base or margin remains unaffected, another application of the paste is necessary. This may be made weaker, only one drachm of arsenious acid, and eight or ten grains of cocaine, and allowed to remain a shorter time.

When all cancerous tissue has been destroyed, a simple dressing is all that is necessary. It usually heals without interruption. Protonuclein internally and externally is always beneficial.

Various other formulae will here follow, with such comments as have suggested themselves. No physician is expected to give all of them a trial, although many of them have merit and are possibly better adapted to some forms than the favorite formula first mentioned. For this reason every available formula, deemed of apparently sufficient value, will be found in the following pages, and these comprise, I believe, practically everything that is known in the treatment of cutaneous cancer by local applications of caustics and other tissue destroying agents.

FUSCHIUS' PASTE.

- ℞ Arsenious Acid.
 Vegetable Charcoal.
 Powd. *Serpentaria*.....āā ʒ j.
 Mix. Make into a thick paste with water and apply.

ESMARCK'S CAUSTIC POWDER.

- ℞ Acid Arsenious.
 Morphine Sulphate.....āā ʒ j.
 Mercurous Chloride, mild.....ʒ j.
 Powd. *Acacia*.....ʒ vj.
 Mix. Make into a paste as needed by adding water.
 This is said to be practically painless.

GUY'S ARCANUM.

- A secret formula, much used in former years.
 ℞ Acid Arsenious.
 Powd. Sulphur.
 Hog's Fennel, (*Peucedanum Off.*)
Ranunculus Sylvestris.....āā ʒ j.
 Mix. Make into paste with water.

FEBRURE'S TREATMENT FOR CANCER.

℞ Acid Arsenious..... gr. x.
 Distilled water..... Oj.

Mix. When dissolved add

Fl. Ext. Conium..... fl. ʒ j.
 Liq. Plumb. Subacetate..... fl. ʒ iiij.
 Tr. Opium..... fl. ʒ j.

Mix. Use as a wash and apply locally, allowing it to dry, every morning.

Internally with the above.

℞ Acid Arsenious..... gr. ij.
 Powd. Rhubarb..... ʒ iv.
 Syr. Chicory..... fl. ʒ viij.
 Waterq. s. ad. Oj.

Mix. Sig. Teaspoonful night and morning.

CERNY'S LIQUID CAUSTIC.

℞ Acid Arsenious..... ʒ j.
 Alcohol,
 Waterāā ʒ vj.

Mix. After a preliminary curetting and cleansing of the surface of the cancer, the mixture is applied with a brush. Allow to dry and apply no dressing. Apply thus daily gradually increasing the strength until the proportion of arsenic is two drachms to the above quantity of alcohol and water. The cancer will become covered with a scab which will gradually thicken and change from yellowish to black, and will gradually become detached by suppuration and can easily be removed. After removal the solution is again applied in the former strength, and the result is watched. If a thin, easily detachable, yellow pellicle only is formed, the cancer is destroyed and the ulceration will heal up. If a dark, firm and adherent crust appears, the cancerous tissue is not all removed and the treatment must be repeated.

Treatment may occupy from one to three months, which is objectionable. It is, however, painless, and is on this account desirable.

HEBRA'S PASTE.

- ℞ Acid Arsenious..... ʒ j.
 Mercuric Sulphide, red..... ʒ iiij.
 Vaseline ʒ iiij.
 Mix.

MARTIN'S POWDER.

- ℞ Acid Arsenious..... ʒ j.
 Powd. Cancer Root, (Orobanchè Virg)... ʒ j.
 Mix. Apply dry to ulcerations.

FRERE COME'S PASTE.

- ℞ Acid Arsenious..... gr. x.
 Mercuric Sulphide, red..... gr. xl.
 Animal Charcoal..... gr. x.
 Mix. Make into paste with water as needed for use.

THE ZINC SALTS.

As has been previously mentioned, Chloride of Zinc is one of the best remedies at our command, and has many strong adherents who claim very excellent results.

In mixing preparations containing chloride of zinc the mixture should be stirred with a horn spatula, as iron will be quickly corroded. Probably an aluminum spatula would also answer. The zinc salts form a whitish or grayish eschar which can be removed in from seven to fourteen days, and when it begins to loosen it is advisable to apply an elm bark or flaxseed poultice to facilitate its removal. These salts cause considerable pain, but it can be largely controlled by morphia or other anodynes. The most popular salt of zinc is the chloride, although the nitrate and sulphate are sometimes used.

The following formula is perhaps the most popular for the application of the chloride:

℞ Powd. Sanguinaria..... 1 part.
 Powd. Galangal..... 3 parts
 Zinc Chloride.....q. s.

Mix the two powders and gradually add sufficient chloride of zinc to make a thick paste consistent enough to be formed with the fingers. Form a piece of this paste into a shape that will cover the cancer and about one-fourth of an inch on each side of it, and one-eighth of an inch in thickness.

Apply this to the cancer and retain in place with strips of adhesive plaster and apply a soft compress and bandage. Let it remain in place for twenty-four hours and apply a fresh plaster. Repeat this process for three or more days, until the tumor becomes shriveled and devitalized. Dress with basilicon ointment daily and allow the slough to become detached without using any traction. This will take place in a week, approximately.

Continue dressing with basilicon ointment until healed. The Galangal and Sanguinaria with Chloride of Zinc form a paste without the addition of water. It should be made fresh each morning. The small variety of Galangal Root, *Maranta Galanga*, is the root preferred.

DR. BRIGHT'S FORMULA.

Dr. Bright, of Lexington, Ky., published the following formula as his most successful treatment for cancer, and is highly recommended by other physicians who have used it for more than twenty-five years:

℞ Solid Ext. Podophyllum..... ʒ j.
 Zinc Chloride..... ʒ iij.
 Starch ʒ ss.
 Red Saunders..... ʒ ss.
 Water, q. s. to make a thick paste.

Spread on cotton cloth one-fourth of an inch in thickness, sufficiently large to cover the cancer and embracing one-fourth of an inch of margin. Bind in place with adhesive plaster and allow it to remain twenty-four hours. Remove and apply freshly after washing the surface of the cancer. Repeat three or four days in succession or until the surface of the growth becomes hard and white. Poultice as previously detailed for six or eight days and the slough will fall out. The poultices should be renewed every six hours. If the cancerous tissue is not all removed, re-apply as before. When all is removed dress with an ointment composed of equal parts of white wax, mutton tallow and lard, melted together and stirred until cold. Before dressing wash the edges with warm water and castile soap and remove filth and hardened crusts. A good dressing other than the above may be made by adding Balsam Peru, one drachm to one ounce of vaseline. During treatment give anodynes as required, also aperients and such constitutional treatment as the patient may require.

BOUGARD'S CANCER PASTE.

- ℞ Mercuric Sulphide, red,
 Ammonium Chloride.....ãã gr. xl.
 Mercuric Chloride, Corros..... gr. iv.
 Acid Arsenious..... gr. viij.
 Wheat Flour.
 Starch.
 Zinc Chloride.....ãã $\frac{3}{4}$ j.
 Water, boiling..... $\frac{3}{4}$ iss.

Mix. Dissolve the chloride of zinc in the boiling water. Mix all the other ingredients in a glass mortar, and pour the solution of the zinc slowly into the mortar, stirring briskly until thoroughly mixed. Let stand twenty-four hours.

Apply on muslin after preliminary curetting and let it remain for twenty-four hours. The poulticing and after treatment are the same as when Marsden's paste is used.

This is an active preparation, but acts on healthy tissue as well as on diseased. It is used by several well known New York Dermatologists with good success.

FELIX'S PASTE.

℞	Zinc Chloride.....	gr. cx.
	Wheat Flour.....	gr. cxij.
	Starch	gr. xxxvij.
	Mercuric Chloride, Corr.....	gr. j.
	Iodol.	
	Croton Chloral.	
	Acid Carbolie Cryst.	
	Camphor	āā gr. x.

Mix. Make into a paste with water. Apply and let it remain six to twenty-four hours.

SHERMAN'S PASTE.

℞	Zinc Chloride.	
	Alum	āā gr. v.
	Acid Tannic.....	gr. ij.
	Persulphate of Iron.....	gr. iiij.
	Glycerine.....	q. s. to make paste.

The following formula is used by several Western cancer specialists:

℞	Zinc Chloride.	
	Podophyllum.	
	Powd. Opium.....	āā ʒ ij.

Mix. Make paste and apply to cancer, spread on a muslin cloth. It is something similar to the Bright formula before given, and general directions given there will here apply.

Hundreds of other formulæ containing Arsenious Acid, Chloride of Zinc, Sulphate of Zinc and Nitrate of Zinc, as also those containing alkaline remedies could be furnished, but it would be a useless repetition and could serve no other purpose than to confuse the practitioner and occupy valuable space. A few other formulæ are however given hereafter which are advocated and used by their adherents. As an addition to our fund of general knowledge on the subject they are valuable, even if they served no other purpose. The majority of secret remedies are often nothing more than old combinations under a different disguise and these formulæ may assist in their recognition.

DAVISSON'S CANCER REMEDY.

- ℞ Sodium and Potassium Tartrate.
 Sulphur.
 Zinc Sulphate.
 Arsenious Acid.....āā ʒ j.

Mix well and add the yolks of eight eggs and beat into a batter. Bake in an oven until dry and hard. Powder the mixture and when ready for use make a paste with sufficient for one application by the addition of the yolk of an egg. Spread on sore and cover with muslin or cheese cloth and apply a coating of yolk of egg alone. Bind in place with bandage and allow it to remain until swelling and inflammation appears and disappears. Remove and poultice. Curette, scarify or blister the skin if the cancer is not ulcerating, before applying.

LASSAR'S PASTE.

- ℞ Acid Salicylic..... gr. x.
 Powd. Starch..... ʒ ij.
 Zinc Oxide..... ʒ ij.
 Lard ʒ iv.

Mix.

This preparation was originated by Lassar who used it

in connection with Arsenic internally. It is designed for slow work, gradual destruction of tissue, and is not as satisfactory as other previously given formulae. It is also recommended for eczema, dermatitis, warts, etc.

Salicylic Acid may be used in considerably stronger proportions, as for instance:

R Acid Salicylic.

White wax.....āā 3 j.

Parafine.

Oil of Sweet Almonds.....āā 3 ij.

Mix. Melt with gentle heat and stir until cold.

VEGETABLE REMEDIES.

Certain remedies of vegetable origin enjoy somewhat of a reputation in the treatment of cancer of the skin. Some have already been referred to while others will follow.

DR. LOMBARD'S REMEDIES.

Doctor Lombard, now dead, was formerly located in Maine, where he had the reputation of being a successful "cancer doctor." The remedies he employed were given to the profession after his death by a physician who attended him during his last illness and to whom they were confided, whether with the understanding that they were to be kept secret or not, is unknown to me.

When the cancer was small he used the inspissated juice of

Phytolacca Decandra,

which was applied in the form of a plaster and repeated until sloughing took place. The after treatment was a dressing with simple cerate.

If the cancer was large he used a paste composed of

Zinc Chloride and Powd. Sanguinaria,

until an eschar was produced, when the phytolacca plaster was applied as in the smaller varieties until the mass sloughed away.

Phytolacca Root has also been employed, in the following combination:

- ℞ Solid Ext. Phytolacca.
Solid Ext. Podophyllum.
Solid Ext. Sanguinaria.
Acid Chromic.
Carbon Tetra Chloride, āā equal parts.
Mix. Apply in the form of a paste.
-

CHELIDONIUM MAJUS.

This drug was first exploited by Denissenko, who claims to have obtained good results from its use. His method of using it is to give internally thirty to seventy-five grains of the extract, dissolved in water, every day throughout the treatment, and to inject into the substance of the tumor, at different points, as close to the margin of the growth as possible, from two to four minims of a mixture of equal parts of the extract, glycerine and water, not to exceed a syringe-ful in all. The frequency with which these injections are given is not stated in the literature at my disposal. The surface of the tumor is also painted with this mixture.

The effects of the treatment noted were: 1. The sallow hue of the skin disappeared. 2. Softening of the tumor set in. 3. After from three to five days, there formed at the points of injection, fistulous tracts about which the softening process progressed with special rapidity. 4. In from fifteen to twenty days a line of demarcation could be distinguished between the morbid and the healthy tissue. 5. The tumor diminished in size and gradually grew less: Sufficient time has not elapsed to give further reports of this treatment.

ALVELOZ MILK.

A juice derived from a Brazilian plant known as *Euphorbia Heterodoxia*, possesses the power of dissolving fibrin and is somewhat caustic. In the treatment of cancer

it is applied with a camel's hair brush and in twenty-four hours a strong decoction of tobacco is applied. In twenty-four hours the Alveloz is repeated and again the tobacco in the same order until the diseased tissue sloughs out. It is not used much in this country, neither is its value entirely established.

The internal use of Butternut, in the form of an extract of the bark, constituted the treatment of one Samuel Thompson, the author of a work on botanic remedies. He advised the use of ten grains of the solid extract every four hours.

FOR INTERNAL, CANCER, with or without Local Manifestations.

A treatment for internal cancer, existing either in conjunction with or independently of external growths or ulcerations, was given me by a well known physician who has had experience with it, and who uses it in all scrofulous or tuberculous conditions as well as in malignant neoplastic growths. He considers it one of his best remedies.

℞ Fl. Ext. Rumex Crispus..... fl. ʒ j.
 Fl. Ext. Phytolacca Decandra..... fl. ʒ j.
 Syrup.
 Waterāā fl. ʒ ivss.

Mix. Sig. One ounce three times daily.

In local manifestations, or in purely local epithelioma, ulcers or indolent sores he uses the following ointment:

℞ Fl. Ext. Phytolacca Decan..... fl. ʒ j.
 Fl. Ext. Rumex Crispus..... fl. ʒ ij.
 Yellow Wax..... ʒ j.
 Benzoinated Lard..... ʒ iiij.

Melt the last two ingredients and remove from fire. Add the fluid extracts to the hot mixture and stir until cold.

Apply several times daily.

PROTONUCLEIN.

Among the newer remedies for the treatment of cancerous growths, the biological remedy Protonuclein merits a prominent position. In the second edition of this work this remedy was mentioned and its use advocated, especially as an after dressing in cases that appeared difficult to heal. Its physiological action however, when taken internally, seems now to be quite as important and the many reports of physicians that have since appeared in medical periodicals substantiate every claim then made for it.

Nucleins of vegetable origin are in the market, but these differ materially from the animal product, both in form and action. My experience with the former has, however, been somewhat limited, having always used the Protonuclein made by Reed & Carnrick.

Its local action in the treatment of Epithelioma and other malignant growths is similar to that in the treatment of rectal ulcers, fistulae, etc., yet in addition we here obtain its anti-toxic action, by which the germs and germ products are promptly destroyed and what is probably more important, this result is not alone obtained from the remedy directly, but by the stimulation given the cellular structures themselves, which effect remains even after the activity of the remedy has been expended.

One of its most important indications is the use of the Special Protonuclein powder as a dressing after the cancerous growth has sloughed away from the action of local applications of caustics and cauterants.

These openings have very frequently been quite difficult to heal, yet with this remedy at our command we can approach one of the most formidable conditions without the usual apprehension.

In tumors where the skin is as yet unbroken this remedy may be used hypodermatically, being injected into the base of the growths, as close to the dividing line between the affected and unaffected part as possible. Ten grains of the

Special powder are mixed with one drachm of pure water at a temperature of 98 to 100 degrees. Allow the mixture to stand for twenty minutes, thoroughly shaking it at intervals. Finally permit the insoluble particles to settle and draw off ten minims of the supernatant fluid and inject. Prepare freshly for each day's use. This is to be repeated twice a day. The same treatment can also be applied in open sores of a malignant nature, in addition to the internal administration.

Internally, in all cases the regular Protonuclein is to be given in such doses as seem warranted. Three to ten grains, three times a day, may be given, according to effect desired and its action on the patient. Continued increase of pulse indicates longer intervals between doses. Continued increase of temperature indicates smaller doses at shorter intervals. General urticaria indicates smaller doses at longer intervals. This latter condition indicates an excess of cellular activity and is a positive order for smaller doses.

It is best administered two hours before meals, or when the stomach is empty.

Locally, use the Protonuclein Special as one would an ordinary dusting powder. Always cleanse the parts before applications with Hydrozone until all pus formations are cleared away. As many of the other antiseptics destroy or modify the action of the Protonuclein, no other solutions should be used, unless washed off after their action has been secured. If slight pain should follow the application of the powder, no anxiety need be felt as it will disappear in ten to twenty minutes.

As a dressing after the caustic treatment it is without an equal and should always be used, whether the wound exhibits any inclination to be difficult to heal or not.

SODIUM ETHYLATE TREATMENT.

Given a case of cancer, first cleanse the ulcer with pure Hydrozōne. Place the patient in a position so that it will remain in contact with the ulcer until ebullition has ceased.

Dry the parts with absorbent cotton and pour over or into the ulcer cavity a ten per cent. solution of cocaine and allow it ten minutes time for action. Dry again and apply to the surface full strength Ethylate of Sodium, which can be obtained by allowing the crystals to deliquesce. This agent is a strong and painful caustic, and the application of cocaine does not always entirely prevent pain. When it touches the ulcer a peculiar change is observed. If the wound is clean the fluid spreads itself out rapidly, and where there is diseased tissue the part turns instantly black. The rest of the surface becomes brown. If the ulcer is not clean the entire surface turns black. An application is made over the whole surface. Over the black parts the ethylate soon becomes gummy and must not be disturbed. The entire surface is now covered with the following powder:

℞ Acetanilide 3 j.
 Aristol 3 ij.
 Acid Boric..... 3 j.

Mix.

Considerable oedema follows the first application but soon disappears. Pain also entirely ceases as soon as the caustic action is completed.

Spread a piece of wadding with vaseline and cover the ulcer, apply cotton and bandage. Dress the sore every day, wash ulcer clean and re-touch such spots with the ethylate as show signs of diseased tissue. Use a glass rod in making the applications. Cures are effected in from two to five weeks. Throughout the treatment, give the patient one or two three grain tablets of protonuclein, three times a day, two hours before meals. This remedy is important in this

connection as it increases the white blood corpuscles and assists in removing the oedema.

DR. GUNN'S CANCER REMEDY.

The following formula appears in Dr. Gunn's "Family Physician," and I have seen it endorsed recently by several physicians practicing in Kentucky, who used it with success:

℞ Red Oak Bark.
 White Oak Bark.
 Phytolacca Root.
 Persimmon Bark.
 Viburnum Prun. Bark.
 Sheep Sorrel.
 Red Clover Blossoms.....āā ʒ ij.
 Blackberry Root..... ʒ iv.
 Cinnamon Bark..... ʒ j.

Boil the above in five gallons of water until reduced to one gallon. Strain and add

Alum.
 Sodium Biborate.....āā ʒ iv.

Sig. Wash the cancer with this three or four times a day until the cancer is devitalized. Dress with a salve made of

Mutton Suet.
 Yellow Wax.
 Crude Turpentine.
 Sweet Gum.....āā equal parts.

Mix by melting all together over a slow fire. When all have melted, remove from fire and stir until cold.

Sig. Apply on muslin and keep in place by bandage.

DRUG ADDICTION.

Notwithstanding the oft repeated assertion, even by such as claim to have had opportunity for systematic observation, that the extent of drug addiction in our country is constantly being over-estimated, and that the danger to be feared from an increase of the same is more imaginary than real, the fact remains that drug addiction, especially that of opium or its alkaloids, and cocaine, is to-day a cruel, merciless monster whose almost relentless grasp holds in a thralldom infinitely worse than slavery, its legion of victims in all parts of the world.

The far-reaching effect of drug addiction cannot be imagined, much less accurately determined, and only such as have had the opportunity of observing a bright, intellectual and promising young man gradually lose his ambition, his character, his manhood, his all, and sink into an oblivion worse than death, can understand the full import of the assertion that drug addiction constitutes a most effective barrier to the elevation of some of our brightest minds, and too frequently clouds the most brilliant intellects.

Morphine daily incapacitates the noble, busy physician, defiles the sacred desk, sullies the ermine of the bench, ruthlessly enters every profession and fastens its terrible and merciless fangs upon every class of people.

No station in life is exempt from the baneful influences of this steadily growing evil; all classes contribute their quota to the insatiable army, who, as without a leader, invariably meet the same fate, unless rescued by such of the medical profession who have given the subject sufficient attention to

recognize the truly charitable service that can be rendered in such cases, and who not necessarily consider the substantial financial returns accruing therefrom.

The treatment of drug addiction is so little understood by physicians in general, that it is almost universally regarded as an incurable disease, and by their inattention to it they practically confess themselves inadequate to the task of curing it.

The successful treatment of drug addictions demands three requisites as follows :

1. The confidence of the patient. Everyone knows the intense degree of secretiveness that develops in an opium or morphine habitue. The fear of an interruption in his supply is sufficient to rouse an almost superhuman energy to forestall it, and indeed the most careful vigilance on the part of the shrewdest physician is often entirely inadequate to cope with the schemes of the most ignorant victim of drug addiction. Many habitues will object to treatment for the reason that they have all experienced the pangs of withdrawal, and have an idea that if treatment would be taken, they will be obliged to pass through extreme torture before they can obtain freedom, and consequently postpone the attempt from one season to another. There are but few institutions now in business who practice the sudden withdrawal system unless it is done under the influence of certain other narcotics, which system is perfectly rational and proper, but applicable only to those who are strong and vigorous. Some institutions claim from ninety to ninety-five per cent. of cures by this method, known as the "Quick Cure" system, but in order to obtain these results, the cases must be carefully selected. Confidence therefore is the first prime requisite to be sought for; without it everything will fail. The physician must assure his patient that in case he is not fully supported by the treatment, that if a craving for the drug comes on, he will see to it that he is supplied with enough to meet his needs, and in no instance must this promise be broken. If the patient

is once disappointed, rest assured he will institute measures to prevent any such calamity in the future.

The next requisite is, the patient must be willing to be cured. Paradoxical as it may seem, one is frequently consulted by opium or morphine addicts for relief from the craving, while at the same time they are daily consuming more of the drug than they actually need to be free from annoyance, and who after treatment, after the craving has been removed, express and often gratify a desire for a single dose, merely to note the results. The results are too well known to require mention, and too strong injunction against such procedure cannot be given. The collaboration of the patient with the physician is absolutely essential.

The third requisite. The physician who essays the successful treatment of drug addictions must possess the means to cure, and exercise good judgment in employing them. An adequate and reliable knowledge of the various phases presented by a number of these cases, and the special means to be employed in effecting successful terminations can only partially be obtained by reading and study; actual experience is necessary. It is by experience only that the physician will be able to accurately determine the patient's needs, whether he really requires the drug or whether he only thinks so; to accurately determine the amount of actual suffering some may endure without complaint, and also to make a liberal allowance for the profuse and exaggerated pleadings of those whose most trifling discomfort renders them unconsolable. In these later named cases, the judicious use of a hypodermatic injection of distilled water will often clear up a diagnosis.

TREATMENT.

In the treatment of drug addictions several points must be considered as bearing directly on the object for which the remedies are employed. The first is, to relieve the patient of the craving he possesses for the drug, and to enable him to discontinue its use.

The second is, to combat the physical and mental disturbances that take place during the period of withdrawal, and to render this process as free from pain and discomfort as possible. The third is, to prevent the patient from returning to the use of the drug, a relapse. In the selection of cases, good judgment again is necessary. Let no one for a moment imagine that the treatment of drug addictionists can be compared with a political job to which no work and a fat salary is attached, nor that all cases are curable, for to one who thus allows his mind to wander, the disappointment will be keen. A certain number of cases are in reality easy to cure, others are more or less difficult and still others are incurable.

Among the latter class, we note those who are very feeble and usually of an advanced age, say from 70 years upward. The pathological changes that have taken place in these subjects, are beyond repair; the digestive and eliminative processes, have practically been abolished; the gastric secretions have been almost entirely checked; peristaltic movements are very much decreased; the sensibility of the alimentary mucous membranes is so benumbed that there is anorexia, simply because the patient does not know he is hungry. These cases live on their reserve of former years, to which the waste of flesh and loose skin is ample testimony. The mind of these cases becomes narrow, and the range of reason is diminished to but a small portion of its former latitude. In these cases, which are so well marked that they cannot fail to be recognized, treatment is useless. No system of medication can restore the practically dead cells any more than the dead body, a combination of cells, can be brought to life. The only hope that can be extended to such, is that of being made as comfortable as possible, until death ends the scene.

In passing judgment on cases which might be supposed to belong to this class, one must be guarded, unless guided by reliable judgment, ripened by experience, and if a possible chance of recovery may be hoped for, a treatment here-

after referred to, should be begun as an experiment, and the subsequent course determined from results obtained.

Another class of incurables is that in which a malignant and painful disease co-exists with the addiction, and which in truth caused its formation. It will be entirely useless for any one to speculate on the curability of these cases, as the analgesic action of opium is the only comfort possible for them to obtain. If the drug is removed, the pain returns and the patient is at once in agony, and becomes uncontrollable in a short time. No method of treatment can cure these cases, no matter what claims may be made for it; the drug is not taken for its delightful sensations, nor from the craving born of a habitual use of it, but as a panacea for pain, than which there is no better remedy, and the only link between the mortal and the immortal.

Among this class may be mentioned those afflicted with epitheliomatous growths, chronic sores or ulcers, renal or hepatic calculi, stone, or any disease or condition, which while it exists, renders the person thus afflicted subject to considerable pain. Before attempting to cure the addiction, the existing cause must be removed. Nothing other than this can be of the least avail, nor merit the suspicion of hope. In contra-distinction to the above must be noted the imaginary pains which the majority of addicts will refer to the stomach, or other internal organ, as an excuse for taking their accustomed drug. Where no other symptoms can be located, nor an intelligent diagnosis made of some disease of which a symptom would be the pain referred to, the statements must be taken at their real value, disregarded entirely, and treatment at once instituted for the removal of the craving. This done, the pain will be seen to have mysteriously vanished.

Curable cases may also be divided into several classes, according to length of time the habit has been present, pathological changes and vitality of the addict. First, we notice the young, vigorous, recent addict in whom the structural changes are practically unnoticeable and a cure easily and

quickly effected. Second, the addict of two or more years standing, in whom the pathological changes are becoming apparent, but confined as yet to slight derangements of the digestive system. Third, the addict of many years standing, in whom pathological changes may be found representing all stages of retrograde metamorphosis. The possibility of their cure depends entirely on the degree of tissue degeneration that exists, and the manner in which they respond to the vitalizing and reconstructive treatment given them.

MODES OF WITHDRAWAL.

While explicit and detailed directions are given in the instructions accompanying the following methods of treatment, for the withdrawal of the drug, it will not be amiss to review in a general way, the various modes of withdrawal which have in the past been practiced and variously commented upon, and the phenomena that attend them.

Three modes of withdrawal of the drug can be employed.

1. The Gradual Reduction Method. 2. The Sudden or Abrupt Withdrawal. 3. The Rapid Reduction Method.

THE MODE OF GRADUAL REDUCTION.

This method implies the gradual decrease of the drug in such quantities as the condition of the patient will allow, manifested by either the absence or presence of what Dr. Albrecht Erlenmeyer, in his work on the Morphine Disease, has termed "the phenomena of abstinence." The more pronounced these phenomena, the slower must be the reduction of the opiate.

This method of reduction is not looked upon with favor by a number of well known writers on the subject. The objections expressed to it are principally, the difficulty of controlling the patient so as to prevent him from obtaining morphine secretly, thus necessarily preventing a cure; the next is, the claim that the patient can better endure stronger and more severe withdrawal symptoms for a short time, than lesser and more prolonged disturbances; and the third is,

the longer period during which the patient must remain under treatment. These objections will be touched upon *seriatim*.

CONTROL OF THE SUPPLY:—As has before been mentioned the full and complete confidence of the patient must absolutely be reposed in the physician, and the patient must be firm in his determination to be cured, and must co-operate with him. If either of these two essentials are wanting, it is useless to attempt to effect a cure by using this method of withdrawal, and other and more forcible means must be employed.

When the patient trusts the physician implicitly, knowing that he will receive from him sufficient of the drug to sustain him, there is no reason whatever for declining to use this method.

ENDURANCE OF SUFFERING:—Erlenmeyer claims that the sum total of suffering experienced by the gradual withdrawal, will be greater than by the sudden or rapid method. Whether this be true or not, depends entirely on the medicinal treatment administered at the time. From his remarks in this connection, it would seem that we are to-day perhaps in possession of knowledge regarding the use of certain drugs, to prevent serious withdrawal symptoms, with which this German authority was not acquainted fifteen years ago, and which we employ with good advantage. It is at any rate, a fact quite positively established that by the use of remedies selected for the purpose, we are enabled to tide a selected class of patients successfully, and practically painlessly, over the period of withdrawal, without much difficulty.

LONG DURATION OF TREATMENT:—This is an objection that will have but little weight with many patients. If the patient is such that he is willing to take plenty of time in effecting a cure in this manner, it would seem to be of little concern to his physician, providing of course, the patient is willing to meet the necessarily increased professional fee. The majority of patients, who are eligible for treatment by this method, are of the intelligent, professional class, and

have the ability of comparing the advantages of one method of treatment with another, selecting the one best suited to their circumstances, and abide by the consequences.

POINTS OF FAVOR.

In contra-distinction to the objectionable features, according to those opposed to the method, the following may be mentioned as points in favor of it. It is not necessary that the patient be taken to a hospital, asylum or sanatorium especially equipped for handling this class of patients, but treatment can be instituted at the patient's home, often with but little if any interference with his daily routine of work. The withdrawal symptoms are not so conspicuous as in the case of sudden withdrawal, and with proper treatment, can be almost entirely prevented or overcome. While being far from recommending this method in all cases, I do not hesitate to state that in the light of our present knowledge of remedies for carrying the patient over this critical period, the method is decidedly advantageous and occupies a place in the treatment of drug addictions which is distinctly its own.

THE MODE OF SUDDEN WITHDRAWAL.

This is the method known as that of Levinstein, and consists of suddenly withdrawing the supply of morphine, imprisoning the patient in a padded cell, and allowing him to fight the fierce battle in such a manner as he may be able to do. Physicians are in attendance to administer stimulants in case of collapse or impending death. Its advantages are claimed to be, certainty of cure and rapidity of cure, the struggle being over in from four to six days. The cruelty of this method beggars description. Tongue cannot describe nor pen portray its horrors.

Its employment is an infliction of a punishment, greater than the vast majority of morphine habitues can bear, and if collapse or death does not ensue, their subsequent condition is such, that a relapse is practically certain. In successful cases the rapidity of cure cannot be denied, but its dan-

gers and probable failure, cannot but condemn it. It is a relic of the past, and deserves no consideration except for condemnation.

THE MODE OF RAPID WITHDRAWAL.

When the condition or intelligence of the patient is not such as to class him among those to whom the gradual mode of reduction is applicable, the rapid method is recommended. Under this method the supply of the drug is reduced by one-half daily, until the point of crisis is reached, when, unless threatened by collapse, the patient is given no more morphine. Reductions can usually be made for several days in this rapid manner until the drug is reduced to a certain quantity, without material inconvenience to the patient, but as the limit of reduction is reached, abstinence phenomena will appear.

Under proper treatment, this period of crisis can be passed with but moderate suffering, although it is rare that patients will not complain considerably during it. Twenty-four to thirty-six hours, will usually witness the disappearance of the symptoms, and the patient will proceed on the course to recovery. The withdrawal symptoms are to some extent increased as compared with the gradual method, but are infinitely less than by the sudden method. From six to twelve days is usually all the time required to render the patient free from the desire for morphine, although subsequent treatment is continued.

The advantages or points in favor of this method are, Certainty of success, entire absence of danger of collapse, a short duration of the symptoms produced by abstinence, and the short time required to effect a cure. When patients cannot be depended upon to co-operate with the physician in the employment of the gradual reduction method, by which the drug is imperceptibly reduced, no alternative is open. Rapid reduction must be practiced, and the crisis must be endured. The rapid and gradual reduction methods are but different degrees of the same plan, and in either case the

reduction can be made as rapid as indicated before, or to a certain extent modified.

DISTURBANCES DUE TO WITHDRAWAL.

When the supply of morphine is cut off, or when the reduction has reached the point at which crisis occurs, certain symptoms, previously referred to as abstinence phenomena, will appear. One of the principal of these is purely psychic, purely a product of the imagination. It is the fear that the patient harbors at the probability or possibility of future suffering. This fear is present when the patient is absolutely comfortable, with no wish to be expressed or no desire ungratified. In certain individuals, this state of the mind is extremely pronounced, rendering their control very difficult, and a restoration of confidence practically impossible. Hallucinations and destructive inclinations frequently are manifested, furious outbursts of rage alternate with the most piteous appeals for relief, attempts at suicide or murder are indeed not beyond the possibilities.

When these symptoms first appear, before the disturbance becomes too great, every possible effort should be made to retain the confidence of the patient.

Among other symptoms of withdrawal, the following are the most prominent: pain in any part, difficulty in swallowing, threatened collapse, delirium, nausea and vomiting, diarrhoea, cramps, insomnia, and irritability of the bladder or incontinence of urine.

Carefully analyzed all the true symptoms, due to the want of morphine can be grouped as follows:

(1) Those due to the lack of the customary stimulus to the brain cells, which stimulus has become so indispensable to functional activity that it is almost akin to vital force itself. These are chiefly restlessness in various degrees, sometimes amounting to actual pain, insomnia, hallucinations, and the reflex symptoms previously mentioned. (2) Those due to the sluggishness of the circulation due to cardiac weakness, caused by the absence of the customary nerve force to this

organ. These are the various degrees of collapse, coldness, cold and clammy perspiration, muscular weakness, etc. These symptoms, due to either of these causes, also appear and are modified or augmented by the lesser or greater disturbance of either the brain or heart, or both of them in conjunction. (3) Those due to the excessive secretion of acid in the stomach.

TREATMENT OF ABSTINENCE SYMPTOMS.

Since the publishing of the last edition of this work, in 1901, considerable new light has been cast upon the treatment of abstinence symptoms, and in fact, as to avoid or ameliorate these constitutes the painless cure of the addiction, one may say that the entire subject stands to-day in a position never before occupied, and that more is known of the successful treatment of drug addiction than ever before.

Treatment of the abstinence symptoms necessarily resolves itself to a treatment of the cause. While formerly many of them were looked upon as due to "nervousness, constitutional disturbances," and other vague terms, I am now absolutely certain that all of them can be traced to one or more of the above three causes. Since recognizing this fact and directing treatment to the organs primarily disturbed, as soon as recognized, a very considerable portion of those symptoms that were once looked upon as unavoidable, are now entirely avoided or immediately dispelled on their appearance.

Some of the secondary and reflex symptoms, when they occur, or cannot be overcome by treatment of the organ from which they originate, require such treatment as they would demand were they not associated with the treatment of the morphine disease.

Nitro-glycerine has an action during the morphine reduction craving that is especially desirable. Apart from its action on the heart it exerts an influence on the disturbed brain cells that produces, in a mild degree, the feeling of morphine euphoria. In doses of 1-100 to 1-75 grain it relieves

the restlessness and craving. Combined with amyl nitrite inhalations its effect is increased. It is useful in chilliness and gives rise to a sense of warmth.

Erythroxyton Coca. The fluid extract is valuable for the relief of restlessness. Half teaspoonful doses repeated as required will afford best results.

For excessive perspiration, atropine is the remedy. 1-100 grain twice or three times in twenty-four hours will be sufficient.

For insomnia, Galvanism is an excellent remedy. Negative pole to the forehead, positive pole to the back of the neck. Four to eight cells will be sufficient. Sleep often occurs within ten minutes of its application.

As the craving becomes more marked the heart's action will be found correspondingly weaker. A strong cardiac impulse is absolutely incompatible with any particular degree of suffering. When it becomes weak, faint, and rapid, sparteine or digitalis must be administered in sufficient doses to maintain what may be considered a fair normal action. The necessary quantities vary in different individuals and cannot be specifically stated.

Hyperacidity of the Stomach. This distressing symptom causes more genuine uneasiness and misery than can be imagined by one who has not seen the expression of those in its throes. Pyrosis almost beyond limit is frequently observed, while the offensive sour breath gives ample testimony that this symptom, at least, is not imaginary.

As soon as the first sign of hyperacidity manifests itself, sixty grains of Bicarbonate of Soda should be given, and repeated in similar doses as often as necessary to keep the stomach sweet. The relief derived from this simple remedy is little short of magical and is not limited to the stomach alone, but the entire system is benefited in a most marked degree.

The Vapor bath taken in moderation or as agreeable, will be found valuable, especially at night before retiring. I do not altogether recommend that it should take the place

of the hot tub baths, but rather that as an agreeable variation it will prove grateful and beneficial.

Physostigmine Salicylate, a salicylate of the alkaloid of the Calabar bean, is a drug that exerts a particularly happy effect in dispelling the symptoms due to the withdrawal of morphine. This remedy was first used by Prof. Waugh, of Chicago. He employed it in doses of 1-100 gr. hypodermatically. He states that it produces a sense of comfort, fully equal, if not superior, to morphine.

Pain may assume the neuralgic type and follow the course of the greater nerve trunks, it may affect the muscular structures, or may be confined to the bones. When neuralgic or muscular in character, the chief dependence is placed in sodium salicylate, the bromides, and when possible, local counter irritation. Collapse requires stimulants, brandy, champagne, strychnine, nitro-glycerine, or sparteine for the heart, hot water applications or faradism.

Nausea and vomiting, may be relieved by ingluvin, bismuth, oxalate of cerium, or if carefully used, cocaine. Diarrhœa requires bismuth, acetate of lead, extract of geranium, zinc sulphocarbolate, etc. Cramps and pains in the bones, are much relieved by hot water applications, in fact a bath in water as hot as can be borne, is often followed by a complete cessation of all the disturbances. No limit to hot water bathing need be observed; patients may spend as much time in it as they wish. Delirium calls for bromides, or what is better, Bromidia, containing potassium bromide, chloral hydrate, hyoscyamus and indian hemp. Doses may be regulated according to effect produced. Trional or sulphonal frequently produce restful sleep.

Cystic irritability and urinary difficulties, scalding, incontinence and neuralgia of the bladder, are often very troublesome. These symptoms alone, have been known to cause the patient to become uncontrollable and decline to continue the treatment. Various remedies are suggested in this condition; belladonna, triticum, hydrangea, boracic or benzoic

acid, sandalwood or saw palmetto, being remedies that may be employed with good results.

Taking as a basis of treatment therefore each of these organs, the brain, heart and stomach, it is scarcely necessary to point out that no absolute schedule of treatment can be outlined, and right here let me say by way of parenthesis, that this is the weak point in all ready-made treatments or fixed formulæ. No two cases can be treated alike, and the results that attend the use of any proprietary or fixed formula are at best very doubtful, as to permanent results.

The most important factors being heart depression, nervous irritability and hyperacidity, the relief of either of these conditions may alone be sufficient to enable a patient to get well who might otherwise be unable to endure the crisis, yet when each indication is simultaneously met by a remedy that overcomes the cause of suffering, all unpleasant effects are frequently entirely avoided.

Although as just stated, no two cases of drug addiction can be treated in exactly the same manner, a majority can be brought to a satisfactory termination by methods of treatment somewhat similar. In the treatments hereafter outlined I wish it to be remembered that no iron clad rules can be laid down. The formulæ given are those most frequently employed, and the progress of the treatment should be regarded as being typical of a satisfactory case. Variations in great numbers abound. Different indications must be met as they occur, yet on the whole, after carefully reading every line of this entire subject, any physician will be able to successfully treat this class of diseases. It will at least serve as a path along which he can travel, making his own observations, and as he wends his way, let him occasionally pause and record that which seems new and interesting, as landmarks for those who may come after him.

HEROIN AND DIONIN.

Both of these drugs remove all desire for morphine because they are nothing more or less than compounds containing morphine, and the idea that is now fast gaining ground that these drugs can form a basis for the treatment of morphine addiction, is entirely unwarranted.

A medical man quite recently, in a letter announced to me with great joy that he was now entirely free from the cursed drug, morphine, and that he was entirely sustained by a quantity of heroin, less than one-third of the usual quantity of morphine taken! Compare this statement to that of an inebriate who finds that he can get along well without whisky when he uses alcohol, and you will appreciate the position of a heroin addict. The craving following the use of heroin or dionin is infinitely greater and more unmanageable than that of morphine. It is indeed second only to cocaine.

DOUBLE ADDICTION.

When morphine is associated with some other drug addiction, the first indication is to withdraw the additional stimulant, no matter what it may be. In the case of alcohol there is usually but little trouble in discontinuing it; indeed after a short time without it the patient is usually better satisfied, as morphine seems to be more satisfying. These two drugs are to a certain extent antidotal to each other. Never attempt to increase the whisky allowance in a double addiction and expect thereby to reduce the morphine and cure the patient. The result of such a procedure would most likely be delirium tremens.

Cocaine addiction, in addition to that of morphine, can also usually be given up with little or no craving. Here also the morphine becomes more satisfying. Do not try to reduce the morphine while reducing the cocaine. Be content with doing one thing at a time. When cocaine alone is the drug

for which there is a craving, a more difficult proposition is presented. Here it is sometimes a good plan to substitute morphine for cocaine, gradually of course, until no more cocaine is needed. The cure of the morphine addiction is then conducted on the same plan as in other cases.

Preparatory Treatment.

FOR OPIUM OR MORPHINE ADDICTS.

As previously stated, the extremely debilitated victim, the physical wreck, is as a rule incurable. Take as an example, a person that is only partially able to attend to his personal needs, in an extreme state of emaciation, without appetite, practical paralysis of the bowels, living only on the drug which has almost annihilated his cellular structures, and it requires no great degree of ordinary intelligence to conclude that the last ray of hope has fled.

In cases in which these changes have not progressed to that point, and in fact in all cases considered curable, I have found it advisable to place them on a course of preliminary reconstructive treatment for a few weeks or a month prior to the time when the regular treatment is instituted. In addition to reconstruction, special attention must be paid to elimination.

For this purpose, cathartics, salines, diuretics and diaphoretics are indicated. Calomel, phosphate of soda, acetate of potassium and pilocarpine are valuable; by their use the alimentary tract will be thoroughly cleared out, the torpid liver will be stimulated, the secretions of the kidneys will

become more profuse and the skin and emunctories aroused to normal action. For nerve and tissue reconstruction, cinchona, nux vomica, phosphoric acid, gentian and valerian, used according to the requirements of the case, will be of excellent service. During preliminary treatment, the daily allowance of the drug can often be very materially reduced without any inconvenience to the patient.

As a tissue builder and reconstructive agent of the first order, Protonuclein (Reed & Carnrick), in doses of ten to twenty grains a day, is a remedy that deserves special mention. Its action is two-fold; it stimulates leucocytosis and combats the action of pathogenic organisms. It is a decided cell stimulant throughout the entire organism, promotes glandular activity, assists assimilation and the reconstruction of disintegrated cell structure. The dose must be regulated to the needs of the individual, and should be pushed to but little less than the point of toleration. This will be evidenced by a feeling of fullness in the head, throbbing of the cerebral arteries and headache. It should be continued for at least two to four weeks, according to condition of patient.

Bearing in mind that in a drug habitue all the digestive organs are sluggish and lack functional activity, one of the first indications is to relieve them and promote normal action. By so doing the gradually decreasing morphine energy will not cause such rapid nor so marked an effect and discomfort. By this means, in addition to the remedies employed, the mild discomforts which in the aggregate would amount to positive suffering, are reduced to the minimum.

The improvement in patients of this class, by a preliminary course of treatment, is well marked, and has I believe a considerable influence on the treatment proper. In giving directions for the administration of the following remedies, and rules to be followed in conducting the treatment to a successful issue, many of the points already brought out in a general way, will be repeated. If the details should seem unnecessarily explicit to any one, let him remember that the minutest details are sought for by many whose experience,

or powers of perception or conception are less, or whose desire to be sure they are right before they go ahead, is stronger in them, than in him who is disposed to criticise.

EXERCISE.

During preparatory as well as during the treatment proper, no unnecessary demands should be made on the patient's energy or upon that of any organ, for although the organism may have practically been restored to a proper balance by the different remedies employed, it will have sufficient need for its reserve forces, and they must therefore not be squandered on useless exercise or unnecessary worryment. Exercise is best taken when the absence of morphine is felt, as the change of position or moving about has a tendency to relieve the mind of the thought which then is uppermost. After each dose of morphine a fictitious energy is felt and it is at this time that the patient will express desire for activity, but if this is done the comfort and ease secured by the drug will be of but short duration, and the want of stimulation is felt earlier than if the opposite course is pursued.

Typical Methods of Treatment.

IMPORTANT.

Do not begin treating a patient for drug addiction until after you have read every word of the chapter on Drug Addiction. Two to five readings will be of proportionate benefit. It will give you a broader view of the subject, details will be impressed upon your mind which you will otherwise overlook, and you will be the better prepared to meet emergencies as soon as their appearance is made. I shall not consider it necessary to repeatedly refer to the importance of watching the three vulnerable points—the brain, heart and stomach. Specifics for the alleviation of symptoms due to perversion of the nervous and circulatory centers cannot be indicated as positively as for those due to hyperacidity of the stomach, and in addition to such as are mentioned throughout the several treatments and general consideration of the subject, let the practitioner remember that the entire materia medica is at his command. Heart and brain tonics and sedatives respond with much the same activity in a patient under treatment for drug addiction, as for any other disease, and the same good judgment should be exercised according to indication. For hyperacidity and the symptoms due to this condition we are better prepared to specialize, for but one remedy need be considered—Bicarbonate of Soda. Bear it in mind always.

It is impossible, except at the risk of tiresome repetition, to give the minute details under each treatment. All methods of treatment should be considered as being but parts of the whole, being but different routes converging toward the same goal. In lieu of personal experience, the best substitute is a thorough understanding of the knowledge that may be gained by careful study of the subject.

A Gradual Reduction Treatment.

AN EXCELLENT METHOD OF REDUCING THE DRUG AND SUSTAINING THE NERVOUS AND CIRCULATORY SYSTEM.

This method of treatment illustrates the principle of restoring and sustaining the nervous and circulatory system in advance of withdrawing the morphine to an extent that is noticed by the patient, and if intelligently administered, varied according to the requirements of each patient, the last fraction of a grain of the drug can frequently be withdrawn before the patient is aware of the fact that he is free of its influence.

Special attention is directed to the necessity of avoiding too rapid reduction. Frequently failures result in overestimating the beneficial action of the remedies employed, after an observance of the apparent smooth course of the treatment. Failures are to be guarded against equally as much on account of their psychic effect on the patient, as for lost time, labor, etc., as patients who have lost confidence are in most instances not desirable ones.

Preliminary treatment as previous outlined must not be neglected. It is of fully as much importance as that which is to follow; indeed upon it often depends the success of the issue and the permanency of the cure.

After attention to the preliminary treatment the quantity of drug consumed is reduced to the amount absolutely necessary to sustain the patient without suffering. The well-known custom of patients to fill themselves up with morphine before taking a cure, must be borne in mind, and for a few days but little is done besides the preliminaries, except to allow the morphine which the patient has stored within himself to expend its force, and ascertain the quantity required. Absolute control of the patient's morphine supply must be obtained, with the full assurance, that any demand will be supplied when needed. Under this reduction, the heart

sometimes becomes weak, but a few doses of strychnine or hydrastin, will remedy this. The principal point to bear in mind is, to keep the patient on as small an amount as will keep him in comparative comfort, and yet not reduce it to such an extent, that he will be miserable before the hour for the next dose. The interval between doses, should vary from four to five hours, preferably before meals and bed-time. Appetite and rest will be better if so given. It is useless to expect a patient to either eat or sleep when he feels the want of morphine, and nothing conduces to a rapid and easy cure, as a good appetite and restful, refreshing sleep. When the patient is ready for the beginning of the regular treatment, the quantity of morphine absolutely required per day, is carefully noted, and from 1-6 to 1-4 of this quantity is given at a dose, hypodermatically, four times a day, thus giving him 2-3 of, or the whole usual quantity in a day. The best method of regulating this is to make a solution of morphine in distilled water, thirty-two grains to the ounce, each fifteen minims of which will equal one grain. To illustrate; if a patient requires four grains of morphine per day, he would receive from ten to fifteen minims of this solution, four times a day, which would give him either two-thirds or one grain at a dose. Never give more than is required, and never reduce it unless it can be done without the patient noticing the difference.

As a nerve reconstructive and tonic, the following solution is given hypodermatically, at the same time as the morphine solution is given :

R̄	Strychnine, alkaloid.....	gr. 1-4.
	Atropine Sulphate.....	gr. 1-6.
	Sparteine Sulphate.....	gr. iij.
	Hydrastine Muriate.....	gr. vj.
	Aqua Destil.....	fl. ʒ j.

Mix. Sig.

Inject fifteen or twenty minims, according to condition

of patient, four times daily, at the same time as the morphine is given. Regulate the dose according to effect, maintaining at twenty minims, if no contra-indications appear.

Continue the morphine solution in same quantity as used at the beginning, for eight or ten days, until the patient feels perfectly comfortable, and has no wish for stronger doses. This feeling should always prevail, but if reduction is begun too early, the patient will complain. Eight to ten days is usually the earliest time that a reduction is attempted. The first reduction is made by giving the doses each one minim less than formerly; not reducing each dose one minim less than the preceding one, but one minim less than was given before the reduction was made, thus giving the patient four minims per day, less than before. If this is borne well, a similar reduction can be made in three or four days thereafter, and so on, until the dose that was given at the beginning is reduced by one-third. Now make another solution, containing half the quantity of morphine used in the former, and double the dose, less one minim. Thus if the patient was receiving ten minims of the solution containing one grain for each fifteen minims, he would now receive nineteen minims of a solution, containing one grain to each thirty minims.

Continue on this solution until the patient is sustained well, and reduce by one minim, each third or fourth day, until the patient receives but one-half of the dose he received at the beginning of the second solution. Now make another solution, just half as strong as the one just discontinued and double the dose in minims, less one, and by similar reductions, reduce until the patient receives but 1-120 of a grain, when the treatment can be discontinued. Use the tonic all along in full doses, gradually increasing them if well borne, toward the latter part of the treatment. Do not inform the patient when the last dose of morphine is given, but give several injections of water for a few days, before informing him that he has taken no morphine for a certain time.

Inspire confidence in the patient, assure him of relief if he needs it, and never reduce to such an extent that the reduction will be felt. Watch the secretions and keep them as nearly normal as possible. Treat all complications as indicated and give plenty of good wholesome food. See reference to diet elsewhere. If hypnotics are needed, as will be in some cases, Bromidia cannot be excelled. This treatment is slow, covering in certain cases, several months, but its success is certain, and all disagreeable features are avoided. It is best adapted to sanatorium work, or in cases where the physician can be in constant attendance.

A Gradual Reduction Treatment Without Hypodermatic Injections.

The following is a method of treatment that will give satisfactory results in selected cases, under proper supervision. It is sometimes difficult to satisfy one accustomed to the syringe mania by administering morphine by the mouth. In certain cases however the change can be made by reducing the amount injected, and giving the quantity taken from it, by the mouth, and slowly increasing the proportions until the full dose is taken internally. Frequently a larger quantity will be required when taken by the mouth than by hypodermatic injection, but this is of little consequence.

A number of reports have come to me stating that these formulae were used for self treatment with the most satisfactory results.

After a course of preliminary treatment, the treatment proper is instituted. By the method of gradual reduction as hereafter detailed, each succeeding dose of the drug is lessened in a manner that is frequently imperceptible. During this process, the Tonic Compound builds up and supports

the nervous system. The drug Jamaica dogwood, an ingredient in the Opiate Compound, deserves special mention as a substitute for morphine or opium. The fluid extract of this drug would often give as good results as opium preparations, if prescribed in their stead for the relief of pain, and in the treatment for opium addiction, its use is very often attended with the happiest results, satisfying the craving quite considerably.

THE OPIATE COMPOUND.

- R Morphine Sulphate . . . q. s.,
 Sodium Bromide ʒ iv.
 Ext. Jamaica Dogwood . . . fl. ʒ iss-ij.
 Ext. Viburnum Prunif . . . fl. ʒ ss.
 Elix. Ammon. Valerianate. fl. ʒ iiij.
 Elix. Aromatic. q. s. ad. . . . fl. ʒ vj.
 Mix. Sig. One teaspoonful three to five times daily.

The quantity of morphine in this compound will depend on the amount consumed by the patient. Sufficient of the drug is to be taken and added to the other ingredients so that each drachm of the compound will contain the quantity usually taken at one dose. Thus if a patient were taking $\frac{1}{2}$ grain doses of morphine, the quantity required would be $\frac{1}{2}$ grain for each drachm of the six ounce mixture, or twenty-four grains. The method by which reduction is best and most conveniently accomplished, is as follows: Prepare two bottles of the above compound and add the morphine to one of them. As each teaspoonful is taken from the bottle containing the opiate, the bottle is replenished with a teaspoonful of the bottle without the opiate. When the bottle without the opiate is empty, another one is prepared and the process continued, no more morphine being added.

The intervals at which the doses are to be taken, should be the same as were formerly observed between doses of the drug, gradually increasing the interval between them, according to the necessity of the patient. After several bottles of

this size have been emptied, and the dose thereby increased to an infinitesimal quantity, the same compound without the opiate should be continued for a few bottles more. In connection with the above, the following compound is administered. It is known as

THE TONIC COMPOUND.

℞ Tr. Nux Vomica,
 Fl. Ext. Passiflora Incarnata,
 Fl. Ext. Avena Sativa āā fl. ̄ j.
 Tr. Hydrastis Canadensis,
 Fl. Ext. Erythroxylon Coca,
 Fl. Ext. Cinchona Comp āā fl. ̄ ij.
 Elix. Aromatic, or Syrup . . q. s. ad. fl. ̄ xij.

Mix. Sig. One to two teaspoonfuls every four to six hours.

Continue this compound, with the other, during the entire period of treatment. The time required to effect a cure naturally depends on the condition of the patient. No one should begin this treatment, unless plenty of time can be given to it. It is a gradual reduction cure, and cannot be completed according to any fixed schedule. If the patient is in circumstances that will allow the employment of a more rapid mode, there is no reason why it should not be adopted, but to the person to whom careful attention to the treatment will not prove laborious, and who has sufficient confidence in himself and his physician to expect a cure and follow directions, the treatment is admirably adapted. The symptoms due to the withdrawal of the drug, are very often practically absent, but will be present in a certain percentage of cases, and entire freedom from them should not be promised. They are never severe and can easily be overcome by a little fortitude. A moderate degree of stimulation, brandy, champagne, or electricity will often relieve the unpleasant symptoms. Attention to the heart and respiration must not be overlooked, and irregularities met according to indications.

Systematic Gradual Reduction

THE USE OF THE ALKALOIDS OF HYOSCYAMUS.

The value of the alkaloids of hyoscyamus in the treatment of opium or morphine addiction is incontrovertible; the hydrobromate of hyoscine, and hydrobromate and sulphate of hyoscyamine being most frequently employed. During the past year the discussion of the value of hyoscine and its various salts has been occupying a somewhat prominent place in many medical periodicals, and has received attention from some of the most eminent therapeutists.

Naturally, when men like Hare, and others in the same class, recognize the value of a drug and deem it of sufficient importance to contribute to medical literature on the subject, interest is promptly awakened, and as a result, hyoscine is receiving the attention its peculiar virtues merit.

Those of the profession who have either of the former editions of this work have been acquainted with the action of this drug for several years, as I mentioned it and gave directions for its administration in my first edition, published in 1900.

The following formulæ will serve as a guide for the treatment of opium or morphine addiction, using hyoscyamine in combination with other well known remedies.

It was contributed by a physician whose experience with this combination has been large and satisfactory.

Injection No. 1.

R̄	Morphine Sulphate	gr. vj or q.s.
	Codeine	gr. vj.
	Caffeine.....	gr. xij.
	Aqua Dest.....	fl. ʒ j.

Mix. Inject twenty minims four times a day, before meals and at bed-time.

Injection No. 2.

R Hyoscyamine Sulphate..... gr. iss.
Aqua Dest..... fl. ʒ j.

Mix. Each two minims equals 1-160 gr.

For directions see later.

Injection No. 3.

R Strychnine Sulphate..... gr. 2-5.
Aqua Dest..... fl. ʒ j.

Mix. For directions see later.

Before retiring at night, give patient two compound cathartics and three grains of blue mass, together with his usual dose of morphine. Next morning the bowels should move, and if this does not occur, a large enema is given, which will start a copious stool. After the bowels have moved, not before, give twenty minims of No. 1, and one minim of No. 2 at once, injected into the arm or leg. He will now take breakfast and pass the time in any pleasant manner, until time for the second injection, which is given just before dinner. The third injection is given before supper, and the fourth at bed-time, about ten P. M. Never let patient sleep during the day. Before retiring, a few mild cathartic pills are given, sufficient to cause another movement the next morning. The second day, the quantity of No. 1, is reduced by one minim, but he is given two minims of No. 2 and two minims of No. 3. Follow this course through the day, and at night give sufficient cathartic pills or calomel to insure a good movement the following morning. Follow this course every night, as free movement of the bowels is necessary, and never start the injections in the morning, until the bowels are moved. The third day, reduce No. 1 by one minim, and increase No. 3 by one minim, No. 2 being given same as before, two minims. No. 2 is never increased or decreased from now on, but as No. 1 is decreased, No. 3 is increased. Decrease No. 1 by one minim each day, and

increase No. 3 by one minim each day. When No. 1 has been reduced to ten minims, some signs of disturbance usually appear, for which asafœtida, in six gr. doses, is given five or six times during the day. If the kidneys do not act freely, sweet spirits of nitre may be given. If the reduction seems to be made too rapidly, reduce it more slowly, always increasing No. 3 in the same proportion as No. 1 is decreased. When the reduction has reached the point where only one minim of No. 1 is given, it may be discontinued entirely, still giving two of No. 2 and twenty minims of No. 3. Now give a large dose of epsom salts and observe the inky black material that passes. At night a hypnotic may be required and Bromidia is administered in half to one drachm doses. Continue No. 2 and No. 3 for a few days, two minims of No. 2 and twenty of No. 3. Supply abundant nourishment, beef tea and cereals, prepared foods, and assist digestion by bitter tonics, gentian, quassia, columbo, and give three or four times a day, one drachm of Tr. cinchona compound. This latter may be begun as soon as the morphine is stopped. Supply reconstructive treatment, hypophosphites, iron and protonuclein as needed, gradually decrease the quantities of No. 2 and No. 3, and give the injections at longer intervals, or the No. 2 may be dropped, and the strychnine may be given by the mouth. Caution the patient in regard to his bowels and advise regular habits.

Note:—In injection No. 1, sufficient morphine is added so that 20 minims will represent the usual quantity taken at each dose.

A Forty-Eight Hour Cure.

FOR OPIUM OR ITS ALKALOIDS, COCAINE OR CHLORAL.

THE USE OF HYOSCINE.

The following formulæ are those employed by the majority of the quick cure institutes, although some may be slightly altered in appearance for the purpose of deceiving those to whom the ready made solutions are sold. The cases that are adapted to this treatment, are the young, recent and vigorous addict in middle life. The less quantity of opium or morphine taken, or the shorter the period during which it has been taken, the quicker and more certain the cure. Do not employ this treatment for old, feeble or debilitated cases.

Formula No. 1.

℞ Hyoscine Hydrobromate..... gr. ss.
 Tr. Rhus Tox.,
 Tr. Apis Mellificata āā ℥ v.
 Sol. Acid Boracic, 2 % fl. ̄ j.

Mix. Sig. Use Hypodermatically.

Maximum dose..... ℥ x.

Minimum dose..... ℥ v.

Use according to directions which follow.

Formula No. 2.

℞ Hyoscine Hydrobromate..... gr. ⅛.
 Strychnine Nitrate..... gr. j.
 Nitro-Glycerine..... gr. ¼.
 Fl. Ext. Avena Sativa fl. ̄ ij.
 Elix. Aromaticq. s. ad. fl. ̄ vj.

Mix. Sig. One drachm every four to six hours.

DIRECTIONS FOR USE.

Prepare your patient by giving him a saline cathartic, magnesia sulphate or citrate. Be sure to have the bowels thoroughly moved before beginning the treatment. Then give a hot bath, an alcohol sweat if possible. A vapor bath cabinet is useful for the purpose. Let the patient abstain from his accustomed drug until the craving becomes urgent, when you will give Five minims of formula No. 1. Wait fifteen minutes and give Five minims more. Wait thirty minutes and give Ten minims more. The patient will now complain of a dryness in the throat and will fall asleep, which will continue three or four hours. (Should these symptoms appear after the second dose, after the thirty minute wait, a dose of Five minims, will probably be sufficient to cause sleep. If it does not, give another Five minim dose after fifteen minutes.)

On awakening, the patient will complain of feeling dizzy, his face will be flushed and the pupils largely dilated. About four hours after the last dose, or when he awakes, give another dose of Ten minims. From now on, when awake, the patient will pick at the bed clothes, grasp at imaginary things, will find bugs, say funny things, may swear or pray, sing or cry, etc. Do not be alarmed at this, as it shows that the patient is under the influence of the remedy, undergoing the denarcotizing process. From now on, give only sufficient doses to maintain this condition for a period of twenty-four hours. As the patient now passes out from under the influence of the remedy, he will either ask for his accustomed drug, or he will renounce it and joyfully proclaim his freedom.

Should this renunciation not be complete, ask the patient whether he has a craving for his accustomed drug. If the answer be "Yes," the denarcotizing process was not continued long enough, and it must at once be resumed in such doses as are required, and the semi-intoxicated condition maintained for another twelve hour period. Stop the treat-

ment again until patient becomes rational and be again governed by his answer.

If he declares himself free from the craving, he will have no further desire for the drug, and you will commence giving formula No. 2.

But few cases will require more than thirty-six hours of the denarcotizing treatment, while many will be cured in from eighteen to twenty-four hours.

During the treatment with formula No. 1, the patient will vomit large quantities of bile, which must not be stopped.

Each time bile is vomited, the patient will feel better, as it is by the action of the liver, that most of the waste products which are thrown off are eliminated. The heart's action usually remains about normal, but should it become weak, or in your judgment require it, give a hypodermatic injection of either nitro-glycerine or strychnine nitrate. The former is indicated when the body is cold. The average dose of the former is 1-100 grain, and of the latter 1-30 grain. Should the tongue become dry, the breath fetid or perspiration profuse, no alarm need be felt. There is also in some cases sneezing, gaping, free salivation, and an unpleasant odor, which may become nauseating to the attendant. Should the respiration become slightly accelerated, no notice need be taken of it, but should it become labored, a dose of 1-4 to 1-2 grain of morphine may be given. This will not now retard the treatment but will soon correct the breathing, when the treatment can be continued in smaller doses.

During the treatment, give the patient all the cold water he wants and plenty of good rich milk. Diet is referred to elsewhere.

THE USE OF FORMULA NO. 2.

After the craving has been removed, and the patient has renounced the drug, give one drachm of formula No. 2, and repeat the same dose every four hours, gradually changing to six hours, as the patient becomes stronger. This should be continued for from three to six days, according to the individual need of the patient.

The most common complaint after being cured of the opium or morphine addiction is insomnia, and experience teaches that sleep brought about without the use of hypnotics, is most beneficial to the patient. Cold, warm or tepid baths may be employed, after which a cold compress may be placed across the abdomen and held there by means of an oiled silk bandage. If drugs are required, I advise the use of Bromidia, (Battle & Co.,) in half to one drachm doses.

During the period of active medication, and for a few days afterward, the patient should be undressed and confined to his room, allowing him to sit up or lie down as he pleases. A nurse should be in constant attendance. Baths should be given daily in temperature as pleases the patient best, or which gives the best quieting results. Hot baths are usually the best. Should the bowels not move at least once in two days, a saline should be given as required. Should there be diarrhoea, if necessary give bismuth, subnitrate or subgallate as needed. After a few days the patient regains his appetite and takes on flesh rapidly. In administering these remedies, use the graduations on your hypodermatic syringe as a gauge for formula No. 1, and graduate or medicine glass for formula No. 2. This treatment is heroic, but not dangerous in properly selected cases.

In speaking to the patient before commencing this treatment, it will be best to avoid mentioning the semi-intoxication which the remedy produces, as some will object to it. It should however be borne in mind that it is the presence of this condition which makes it possible to abruptly withdraw the drug without the infliction of much suffering, just as it is possible to perform surgical operations painlessly under the influence of ether or other anaesthetic. It is always best to inform the friends of the patient, if they will see his condition, that such will be the effects of the treatment, thus showing that you are familiar with its action.

A Rapid Reduction Treatment.

FOR OPIUM OR ITS ALKALOIDS.

This is an admirable method of treatment and one which will show a large percentage of cures in curable cases. The quantity taken or the length of time that the addiction has been present, makes but little difference in the final results, as it has been shown that cases taking upwards of one hundred grains of morphine a day have recovered as quickly and as easily as those whose daily consumption equals but two to ten grains.

All cases are adapted to this treatment except the feeble and debilitated, especially if over sixty years of age. The treatment must be given under the physician's direction, or that of a good nurse, and the patient should be seen several times a day. In giving this treatment, no special course is outlined for the patient to pursue, but he can either go to bed, lounge about or spend part of the time in the open air. He should not attempt to do any work, nor exercise any more than possible. The more exercise that is taken, the more the tissue waste, and the consequent call for more frequent stimulation. No morphine should be given after the treatment is begun, unless absolutely required, as will be shown by extreme nervous prostration. The greater portion of cases will not require any of their accustomed drug during the time they are under treatment, but are fully sustained by the remedy.

Formula No. 1.

℞ Powd. Ext. Cannabis Indica..... gr. iv.
 Res. Podophyllum..... gr. iij.
 Atropine Sulphate..... gr. $\frac{1}{8}$.
 Strychnine Nitrate..... gr. 1-3.

Mix. Ft. Caps. or Pil No. xvj.

Sig. One pill or capsule with each dose of the following preparation.

Formula No. 2.

℞ Fl. Ext. Avena Sativa..... fl. ̄ j.
 Fl. Ext. Passiflora Incarnata,
 Bromidia, (Battle & Co.,).....āā fl. ̄ iss.
 Spt. Ammonia Aromatic,
 Syr. Lactucarium Virosaāā fl. ̄ ij.
 Mix. Sig. Four drachms as directed hereafter.

DIRECTIONS FOR USING.

The night before commencing the treatment, allow the patient to take his usual dose of opium or morphine, and also give a ten grain dose of calomel, triturated well with the same amount of sugar of milk.

This will start the liver to action, which is highly necessary. In the morning, after the bowels have moved, let him have his usual dose of drug and in one-half hour, commence the treatment by giving one pill or capsule of formula No. 1, and four drachms, (one-half ounce) of formula No. 2. Give both together as though it were only a single preparation. Repeat this dose every three hours until twelve to fourteen doses have been taken. Then give a dose every six hours, until three to six more have been given, or as may be required.

After the twelfth or fourteenth dose, give one-half to one drachm of Fl. Ext. Passiflora Incarnata every two, three or four hours, according to the nervous condition of the patient, and continue until twelve to fifteen doses have been given. Do not give the Passiflora until formula No. 2 is being taken at six hour intervals, when it should be given between doses of same.

Should there be excessive nervousness, Fl. Ext. Avena Sativa in doses of twenty drops and upward every three hours, will be of excellent service.

Should the bowels become inactive, keep them moving with calomel and small doses of podophyllin. The patient will feel relieved after each passage.

After the *Passiflora* (and *Avena Sativa* if necessary,) has been taken for thirty-six to forty-five hours, gradually stop it, and when the doses have been reduced by ten minims each dose until none is required, the treatment will have been completed. Should insomnia be persistent, and the means before mentioned fail, half to one drachm doses of Bromidia, should be given. This preparation has a peculiarly effective action on these cases, as patients awake without the usual dullness experienced by the use of the commercial bromides and chloral.

If during the treatment, the patient should become more nervous or weak than is thought to be safe by the physician in charge, small doses of morphine, (1-4 to 1-3 gr.) may be administered every fifteen, twenty or twenty-four hours. This will ease the patient, but the treatment must then be continued somewhat longer, at least thirty hours after any of the drug has been given.

Never begin the treatment until the bowels have moved and the alimentary tract is clear of all irritating substances. Should nausea come on at any time give warm water and induce emesis; it will add to the comfort of the patient. Hot, cold or vapor baths may be given, as best borne by the patient. Should the heart become weak, or drop below fifty per minute, give digitalin or nitro-glycerine; the latter if the body is cold.

Persons too weak and debilitated to take this treatment, should be given the one next mentioned.

A Gradual Reduction Treatment.

SPECIALLY RECOMMENDED FOR WEAK AND DEBILITATED
SUBJECTS. FOR OPIUM OR ITS ALKALOIDS.

This is a very effective method of treatment, and as above stated is especially valuable in old, weak and debilitated cases. It can also be employed in the treatment of strong and vigorous cases, but these are usually anxious for a treatment that cures more quickly. It is also an excellent treatment for those who wish to be their own patients as well as their own physicians; for self-treatment. While it has been called a Gradual Reduction treatment, it is not always that the accustomed drug will be called for, and consequently the cure becomes in such cases a comparatively rapid one. No opium or morphine should ever be given during the treatment, unless absolutely required. When a patient is well sustained by the treatment and no drug is required, the cure is usually effected in less than six days, while in those who have the need of it, and who take small doses as occasion demands, may prolong the treatment to twenty or even thirty days.

The immediate and constant attention of a physician or nurse is not required during the administration of this treatment, but one or two daily visits should be made by the physician. Especially is this true if the case is treated on the gradual reduction plan, as the physician should have absolute control of the morphine supply of the patient, and at his visits should administer the necessary amount. It is hardly necessary to add that the visits of the physician should be at stated intervals and that punctuality is an important feature.

The patient should not work during treatment, but it is not essential that he be confined to the house. The direc-

tions should be carefully followed, especially the instructions relative to the reduction of the doses of the accustomed drug.

The formulæ are as follows :

Formula No. 1.

R Tr. Belladonna lvs. fl. ʒ viij-xij.
 Fl. Ext. Hyoscyamus fl. ʒ vij.
 Fl. Ext. Prickly Ash bark fl. ʒ iv.
 Glycerine, C. P. fl. ʒ iiij.
 Syrup Simple. q. s. ad. fl. ʒ ix.

Mix. Sig. One drachm every three hours as directed hereafter.

Note. Increase or decrease the belladonna, according to effect. Moderate dryness of the throat and dilatation of the pupil being indicative of sufficient dosage.

Formula No. 2.

R Fl. Ext. Passiflora Incarnata,
 Fl. Ext. Avena Sativa,
 Tr. Nux Vomica. āā fl. ʒ j.
 Tr. Hydrastis Canadensis. fl. ʒ ij.
 Tr. Cinchona Comp. q. s. ad. fl. ʒ vj.

Mix. Sig. One drachm every three, four or six hours. as directed.

DIRECTIONS FOR USE.

Nearly all morphine, opium or laudanum addicts use more of the drug than is actually required to keep them comfortable. For a period of three or four days ask your patient to reduce the quantity of the drug to the lowest amount that will sustain him without suffering. Give him during this time, one drachm doses of formula No. 2 every four hours.

After three or four days of this treatment, during which time the drug is often very much reduced, before retiring at night, give him a ten grain dose of calomel, triturated well with a like quantity of sugar of milk. This will stimulate the liver to action which is highly necessary in the treatment

of these addictions. The following morning, after the bowels have moved, begin with formula No. 1, one drachm every three hours, and give formula No. 2 every three, four or five hours, according to the nervous condition of the patient.

Formula No. 1 should be given every three hours, night and day, although one dose may be omitted if the patient sleeps and awakes *without* a strong craving. If the craving be strong on awakening, no dose must be omitted. If the patient is nervous, restless, afraid or melancholy, formula No. 2 should be given every three hours, alternated with No. 1. No. 2 may be continued night and day as may be required. It is a tonic to the motor nerves and sedative to the sensory.

Some patients, generally the young and vigorous, or those who used but small quantities of opium or morphine, will be able to discontinue the use of it as soon as the administration of formula No. 1 is begun. In these cases where none of their accustomed drug is taken during the treatment, continue the treatment for Sixty hours, after which reduce each dose by ten minims until none is taken. Formula No. 2 may be given in full doses while formula No. 1 is being reduced, if patient shows signs of increasing nervousness, or if not, it may be reduced in the same manner. Formula No. 2 may be continued as a supportive for a period of a week after formula No. 1 is discontinued, in full doses three times a day.

Gradual Reduction. If a patient is not perfectly sustained by the treatment as above given, but manifests a craving for his accustomed drug, a small dose of morphine may be given once in ten, fifteen or twenty hours. Begin with about one-third of the usual quantity taken at once, and *reduce* every succeeding dose by one-sixth to one-third. Do not repeat unless absolutely necessary for the fair comfort of the patient. Continue the treatment, in same manner as outlined above, until the patient has taken none of his drug for sixty hours when you will reduce the medicine as above.

It is apparent that the less morphine given during the treatment, the quicker the cure.

If, when the remedy is being reduced, a desire for the drug should appear, do not give it at once, but return to the full doses of the remedies and continue thus for twenty to thirty hours longer, when the reduction process may again be begun. For weakness or irregularity of the heart, or should it drop to less than fifty, give digitalis, strychnine or nitroglycerine, as indicated. The bowels will generally remain open, but should constipation be present, it must be overcome by the use of calomel, podophyllin or sodium phosphate. Dark, inky passages will occur in the latter stages of the treatment, and will greatly relieve the patient. For insomnia, if the bath and wet pack will not relieve, half to one drachm doses of Bromidia should be employed as required. Baths may be used as before mentioned under the former treatments.

The Mattison Method of Treating Morphinism.

Dr. J. B. Mattison, of Brooklyn, N. Y., who has devoted thirty years of his life to the treatment of drug addiction, has published a monograph on the subject, the essentials of which are contained in the following extract.

In offering his method which he terms the American method, in contrast to the cruel and torturing sudden and rapid reduction methods of Levinstein, Erlenmeyer, and other European specialists, he claims both originality and success, and places his method in advance of any yet presented.

His method is a mean between two extremes—avoiding the painful ordeal of abrupt disuse, and the tiresome delay of prolonged decrease,—and is based on the power of certain remedial resources to subdue abnormal reflex action, and secures largely, two cardinal objects—minimum duration of treatment and maximum freedom from pain.

It consists in producing a certain degree of nervous sedation and consequent control of reflex irritation, by means of the bromides, more specifically the bromide of sodium.

In obtaining the effects of this drug, he secures the influence of the continued administration of it, giving it twice in twenty-four hours, at regular intervals, so as to keep the blood continually charged with it. A most important difference exists between the effect of this mode of using it, and that of the single dose, or two or three doses given so nearly together as to form practically one dose. In the former case the system is constantly under the bromide influence, while in the other it is nearly free a large portion of the time, due to the drug being eliminated.

As the desired action of the continual administration of this drug is somewhat remote, four to six days usually elapsing before there is decided evidence in this direction, much more desirable results are secured by its employment for several days prior to complete discontinuance of the opium—meanwhile gradually reducing the opiate—than if the withdrawal be abrupt, and then reliance placed on the bromide.

In the former instance the maximum sedative effect is secured at the time of maximum nervous disturbance from the opium removal, and its counteracting and controlling power is much in excess of that to be had from its administration after the nervous irritation has set in.

The bromide of soda is preferred for the reason that it is more agreeable to the taste, more acceptable to the stomach, causes the least cutaneous eruption, and much less muscular prostration than either the bromide of potassium or bromide of lithium.

As all the bromides in powder form, or in strong solution, are somewhat irritant, sometimes causing emesis and always delaying absorption, it should be given largely diluted, never with less than six or eight ounces of cold or carbonated water, and in the larger doses, giving one drachm of water for each grain of the salt.

To secure the requisite degree of sedation within a limited time, it is essential that the bromide of sodium be given in full doses. Failure is often due to non-observance of this point. The initial dose consists of ten grains, twice daily, at 10 A. M. and 10 P. M., increasing the amount twenty grains each day—giving the second day twenty grains at each dose, the third day thirty grains at each dose, the fourth day forty grains at each dose, and continuing thus in proper cases, until the maximum dose of one hundred grains, twice a day, is reached.

During this time the usual opiate is gradually reduced, so that on the tenth day it will be entirely abandoned. A decrease of one-fourth to one-third of the usual daily quantity

is often made at the outset, experience having proved that habitues are almost always using an amount in excess of their need, and this reduction causes little or no discomfort.

Later, the opiate withdrawal is more or less rapid, according to the increasing sedation, the object being to meet and overcome the rising nervous disturbance by the growing effect of the sedative.

In patients who are weak and anemic, a tonic course of treatment will be advantageous in advance of the treatment for morphinism, in connection with good food and hygienic measures.

Patients may have attempted to reduce their daily allowance before coming for treatment, and in such cases the usual large reduction at the outset is omitted. The condition of others may be such that no reduction will be allowable for two or three days, until a part of the bromide action has been secured. With *all* patients this rule governs. Each case is a law unto itself; and the length and amount of the bromide giving and consequent rate of opiate decrease is determined entirely by individual peculiarity, as shown both before and during treatment.

If surprise should be expressed or objection made regarding the large doses of bromide given, it must never be forgotten that we are not to be governed in the giving of any remedy by mere minims or grains, but by the effect produced. Again, one result of opium addiction is a peculiar non-susceptibility to the action of other nervines, necessitating their more robust giving to secure the desired effect.

Given in the manner described, no unusual effect is noticed before the fourth or fifth day. Then an increasing drowsiness appears which deepens into slumber more or less profound, to such an extent sometimes that it is difficult to remain awake. With this is an aversion to exercise, not solely due to muscular weakness but also to mental lassitude. Sometimes the hypnotic effect is not very decided.

The bromic breath is sometimes noticed. There may be acne, but this is usually absent. The renal secretions are

often largely increased, and when this occurs, indicating rapid elimination, the sedative effect is not so well marked.

Patients with serious lesion of the heart, lungs, or kidneys, should not be treated by this method, and debilitated patients should always receive the tonic course previously referred to.

Having secured the desired sedation and reached the point where all opiates are discontinued, the reflex symptoms are met by codeine.

As a rule this drug is not needed during the period of decrease, although exceptionally, a dose or two may be required the ninth or tenth day. When its active use is begun it is given in doses of one or two grains, every three to five hours, by the mouth or hypodermatically, and this is continued for eight to twelve days, gradually lessening the dose or increasing the interval, till no longer required.

The salt of codeine usually given is the sulphate, muriate or phosphate.

There is always insomnia after the discontinuance of the opiate. This Dr. Mattison overcomes by trional, twenty to thirty grains for men, and twenty grains for women, at 7 P. M., on the tongue, aided if necessary, by ten grains more in three hours. It may be followed by hot water or milk. This may be necessary for eight or twelve nights.

For the relief of unrest or neuralgia he gives cannabis indica in doses that seem large, but he assures us that he has given them to hundreds of men and women without producing toxic effects that gave him any anxiety. He gives of Cannabis Indica, thirty to sixty minims of Parke, Davis & Co.'s or Squibb's fluid extract, or one to four grains of solid extract. Small doses are exciting while large doses are sedative, quieting and harmless.

He also uses the Turkish baths for restlessness and neuralgia. Warm baths are worthless; hot baths useful. For diarrhoea, when it occurs, he gives hot water enemas, zinc sulphocarbolate, fluid extract of coto, bismuth or tannopin, and if all fail, a full dose of opium by the mouth or bowel.

This always controls it, gives a full night's rest and the diarrhoea seldom returns.

He also recommends galvanism, nitro-glycerine and bicarbonate of soda in the same manner as mentioned under a method of treatment previously given. In case of collapse, which he says has never occurred to any of his patients, he would give immediately a full dose of morphine. The indications for this would be irregular pulse, livid skin, faintness and pallor.

Dr. Mattison advocates the discontinuance of the syringe as soon as treatment is begun, or at least within a few days, and substituting therefor the giving of morphine by the mouth. This removes the fascination that patients seem to have for the syringe and prolongs the effect of the morphine. The acme of effect is reached earlier by the hypodermatic method, but it also disappears earlier, while by the mouth the effect is slower but more persistent.

Patients injecting six or eight times a day will do well on four doses by the mouth.

The patient is not informed as to the decrease of the opiate nor of the actual time when it is entirely stopped.

During the decrease patients are informed that if the amount allowed is not sufficient, more will be given on application. This being the case, no motive exists for secret taking, and inspires confidence.

After treatment is completed and the patient free from the use of the opiate, months must elapse before the system is restored to its normal status. Premature return to physical or mental work will imperil the prospect of permanency, and should be avoided.

Relapses.

The general impression seems to prevail that any cure for opium addiction, that is not at once positive and permanent, is not worthy of recognition, and to the relapses that occasionally occur, is in a great measure due the unmerited condemnation that has been placed on any treatment for this addiction, by many men of the profession. This is undoubtedly an error. Are not all physicians familiar with the relapses that occur after an apparent cure of typhoid, catarrhal or other fevers? Are not surgeons frequently called upon to operate a second or even a third time on cases in which apparently no doubt existed as to the outcome of the first? Because a certain line of treatment in which you have unbounded confidence fails to perform the work expected of it in an isolated case, do you forever condemn it and refuse to use it again?

To condemn any treatment because its action is not uniformly satisfactory, is to condemn all the means at the command of the physician, the surgeon and obstetrician. If one trial fails, pursue the rational course that is followed in any case, if after convalescence from any disease, the patient should have a relapse. Failures and relapses are not always attributable to the treatment employed, as patients, during treatment and after a cure, are often responsible for the failure to obtain results that are in every respect satisfactory.

An important factor in determining the permanency of a cure, is the cause that was responsible for the formation of the habit. It will be necessary to consider this point thoroughly, as if the same conditions which caused the patient to resort to the use of morphine are still present, there will be a strong temptation to seek relief in its narcotic effects again. Special attention should therefore be given to the removal of the cause underlying the first resort to the drug.

In a certain number of cases, an occasional craving will manifest itself from no determinable cause, unless it be the occasional mental reference which the patient makes to the buoyant state in which he existed while under the effect of the narcotic, contrasted with the present state of imperfect nerve control. Even after a cure has been effected, sometimes for several months after, the patient will not feel entirely comfortable, even though there be nothing present that could properly be termed a craving; it is a peculiar loneliness, absent mindedness, lack of energy that at times makes its appearance, and the patient cannot help imagining the delightful sense of relief that he could obtain by just a single dose of morphine. For this reason a change of scene, change of occupation, travel, amusement, in fact any diversion, will be of material assistance to the patient. There is a peculiar feature in this connection; the seventh month after the cure seems to be the hardest one to endure, and all cured patients, unless they are absolutely free from all traces of the habit, should undergo a tonic course of treatment from the sixth to the end of the seventh month.

Another frequent cause for a relapse is insomnia. With insomnia, a weakness of the heart is frequently noticed, and when this is the case, the weakness or irregularity must be met with such drugs as digitalin, sparteine, strychnine, caffeine or cactus. The relief of the cardiac irregularities is often followed by refreshing sleep.

If this is not present or after it has received attention, the insomnia will usually yield to the use of hypnotics, baths or wet pack. As a hypnotic suitable for these cases, nothing excels Bromidia, (Battle & Co.) The action of this preparation is especially advantageous in the nervousness and exhaustion frequently met with, especially in those above middle age. The dose should be from fifteen drops, frequently repeated, increased to one teaspoonful if needed. It is frequently beneficial to change hypnotics on different nights. Do not forget the baths, with cold pack on abdomen if insomnia is persistent.

Diet.

The capricious appetite of persons addicted to the use of opium or its alkaloids, is often entirely destroyed unless special attention is directed toward the selection of food, especially toward the latter end of the treatment, and for some time following the cure.

Sometimes the appetite returns with such force that there is danger of over-eating, and on this account special directions should be given to avoid it. When too much food is taken, even though the appetite demands it, it is usually followed by gastric disturbances and, almost without exception, a craving for the accustomed drug.

During the treatment it is a good practice to avoid all solid food, limiting the diet to liquids, prepared foods and fruits, as hereafter outlined.

Exception may be made when one of the methods of gradual reduction or home treatment is employed, whereby the treatment is extended over a period of two or three months. In these cases the patient is more gradually brought away from the influence of the drug, and the system restored in advance of entire withdrawal.

When a method of treatment is employed in which the physician or nurse are in constant attendance, as in sanatorium or hospital practice, when a rapid cure is desired, or in any case in which the appetite fails, and the stomach becomes irritable and rebellious, often accompanied with nausea and vomiting, a careful dietetic regimen must be followed.

Liberal doses of bicarbonate of soda, especially when there is hyperacidity, lime water, and charcoal will often relieve the more urgent symptoms. I am particularly partial to soda, and as previously stated, place much reliance on it.

For extreme irritability of the stomach, external applications of mustard, chloroform, or ice will sometimes relieve. Internally cocaine may have to be resorted to, and if all this fails, a full dose of the accustomed drug may be required to tide over a critical period.

A strict milk diet, for several days or a week, will often overcome the more prominent symptoms, yet some patients are unable to take milk in the necessary quantities, either on account of an aversion to it or because it produces bowel irregularities. Taken fresh, it will cause diarrhoea in some, while others will be constipated if it is taken boiled.

Ordinarily, when no special gastric disturbances are present or threatened, fruit and fruit juices are beneficial; vegetables boiled and seasoned, are allowed; bread, plain or toasted, biscuits and cereals may be taken as desired, due regard being observed as to quantity.

Beef tea, prepared either from prime lean beef, or a good extract of the same, is grateful and nourishing. It may be used within proper bounds. Food should be taken whenever its need is felt, but eating to the limit of capacity is always prohibited.

The prepared foods form an agreeable and nourishing diet for persons undergoing treatment for drug addiction. My experience has been that a solution of many of the perplexing problems relative to diet, will be found in their employment.

When the exclusive milk diet disagrees or is not palatable, such foods as Horlick's malted milk, Eskay's albumenized food, Mellin's food or Wampole's milk food should be employed. These foods are nutritious, tax the digestive organs but little, furnish a large amount of nourishment in comparison to the quantity taken, and are quite palatable.

Bovine is also an excellent food, in many cases preferable to beef extracts, beef broths and similar products. When well borne, an unusual amount of nourishment is derived from a small quantity of this preparation.

Oysters and clams, to those fond of this food, are usually acceptable, and when prepared with plenty of rich milk, form excellent diet.

During treatment for Inebriety patients are usually not troubled on account of a lack of appetite, nor rebellion of the stomach, but on the contrary, frequently eat more and feel better than before.

INEBRIETY.

CHRONIC ALCOHOLISM.

A lengthy discussion as to whether the excessive use of alcoholic stimulants is a disease or a habit, is at this time unnecessary, as the medical profession is now practically a unit in conceding that while the occasional indulgence in the use of alcoholic liquors as a beverage may properly be termed a habit, it speedily becomes, through unwise indulgence, so pronounced, as to constitute actual disease, manifested by certain morbid phenomena. To the laity these phenomena are not always apparent and their opinions are formed by the impressions conveyed to their minds by the occasional or frequent sight of an intoxicated person, in whom they see personified all that is wicked and immoral, wholly ignorant of the pathological changes that have taken place in that delicate structure, the nervous system of the inebriate. Again, the temperance advocate and total abstainer are strong in their declarations that drunkenness is a mean, low and disgraceful habit, from which any ordinary person can free himself by the exercise of his will power alone, while their deductions are offset by those of the victim himself, who maintains that he is afflicted with a high-born, aristocratic disease, of uncertain nervous origin, for the temporary relief of which alcoholic beverages have proved themselves a sovereign remedy.

Among the laboring classes, those whose position in life calls for an expenditure of vital force which their plain and often innutritious diet fails to furnish, the habitual use of stimulants is frequently due to their discovery that alcohol will supply to them the stimulus needed to enable them to

accomplish a greater amount of work than they would otherwise be able to perform. The step from a custom of this sort to confirmed inebriety, is short, indeed.

Among the higher classes, the desire for alcohol is often the abnormal craving of an impaired and degenerate nervous system for something that will stimulate and support, in order that it may perform its functions without pain or friction.

The desire for alcoholic stimulants is undoubtedly to a certain extent hereditary; a virgin fountain fed from an impure and tainted spring.

This heritage of depraved blood is a horrible endowment, but something from which unborn multitudes cannot escape, for shall not the sins of the father be visited upon the children even unto the third and fourth generation? What a dreadful heritage! What a frightful possession!

The careless and unthinking multitude drink daily, perhaps because the primary effect to them is pleasing, or perhaps because it temporarily satisfies a craving which they have never stopped to analyze, and in the very face of the fact that they almost daily see the death of some person, cut off in the prime of life, either from chronic alcoholism, or some one of the many disorders to which it gives rise.

In the indiscriminate use of alcoholic liquors physicians assume a responsibility for which they would hesitate to answer, and for which they would dread to be held accountable. While alcohol has in some forms of disease an apparent therapeutic value, physicians should exercise greater care and discrimination in advising its use, as habits of inebriety are not infrequently directly traceable to a physician's prescription. Then, too, it should not be forgotten that unquestionable therapeutic authorities hold that alcohol is absolutely destitute of curative power, but is always a profound nerve and tissue poison, producing first an exhilarating effect which is later followed by a state of depression, to counteract which a further supply is necessary. Any thera-

peutic effect which has ever been claimed for alcohol can be obtained by the administration of other drugs, the action of which is better understood and better controlled, and which are certain not to leave the patient in a state of nerve hunger for which alcohol is the only remedy, and which the patient will not be slow to discover.

Drunkenness is seen in two forms, thus establishing the theory that it may exist as a psychological disease of the mind, or as a well defined physiological abnormality of the nervous system.

As an example of the first form we have the periodical drinker who wavers between two extremes; either abstaining entirely for an indefinite period, or neglecting everything, and doing nothing but drink, drink, drink until he becomes so sick that he is compelled to desist. His spree always winds up in this manner, and the thought of being sick and his desire of becoming well, changes the current of his thoughts, and when he recovers he will not drink again until he begins to think of it again. These cases are primarily psychological and it is not until they get the thought of drink thoroughly riveted in their minds, that the inhibitory power of the will is paralyzed, and the first drink is taken. In a short time he feels new life and energy, every cell in his body becomes buoyant and produces a feeling of exhilaration which he cannot contain, and he continues to drink until he is no longer able to do so.

In the other form of drunkenness, where the shattered nervous system demands a continual stimulation or suffers collapse, the condition is entirely different from the former.

The continual drinker never gets sick from the use of liquor, but from the lack of it. Without his customary "bracer," an individual, who perhaps holds the destiny of nations in his hands, is utterly unfit to perform the slightest portion of his daily duty, or unable to write his own name.

This form of drunkenness is usually a subsequent stage of the former. Periodical stimulation, repeated with inter-

missions that in many cases steadily grow shorter, in time tend to produce the nervous state which characterizes the second form. When this condition is not produced, as is often observed in men who have indulged in numerous periodical debauches, the nerve centres of the individual have acquired by inheritance; constitutional perfection perhaps; a resistance sufficient to prevent the degenerative changes from taking place. It is this nerve resistance which saves every moderate or periodical drinker from that condition in which stimulants are continually demanded, and which limits the disease to a psychological one, with more or less constitutional manifestations. The man who can drink or leave it alone, usually drinks. He will drink whenever he thinks of liquor if he has the opportunity. That he does not become a habitual drunkard is not due to his will power, but to his inherited resistance, a condition which he cannot understand but which nevertheless enables him to do without stimulants if occasion demands it, and yet does not suffer from the lack of them. In him who has less of this nerve resistance, the disease gradually progresses and steadily there is developed the nerve center degeneration which makes a stronger demand for stimulation, renders the mind less firm and consequently more easily influenced by the morbid craving, and constant stimulation becomes a necessity. To overcome this craving, treatment must be directed to the reparation of the shattered nerves and impaired vital organs, which brings us to this part of the subject.

TREATMENT.

If the periodical excessive indulgence in stimulants were entirely psychological, drug treatment would necessarily be useless. This is, however, not the case. It is psychological, or practically so, in such persons who can by their own efforts discontinue the use of liquor. In these cases all that is necessary is to prevent the thoughts in this direction from controlling the individual and obtain his promise to avoid his former associates, to remain away from places where liquor is sold, and if possible, with promise of reward, give him an object to be attained by the fulfillment of his promise. In the young this can often be brought about by the promise of such objects as they desire or will appreciate, while in the older, promises of employment or position in society may be made conditional upon their abstinence. Change of surroundings or occupation is frequently of benefit in this connection.

In the more advanced cases, where in addition to the psychological phase we have beginning degeneration of the nerve and vital forces, more than moral suasion is necessary.

It is not considered possible, by the use of any combination of drugs imaginable, to change the cell arrangement of any individual in such a manner as to remove the possibility of his becoming addicted to the use of alcoholic stimulants, or to forever destroy the taste for it after it has once been established, without the aid and co-operation of the person directly concerned. No one, no matter what treatment he has taken, no matter what the claims that are made for it, can remain cured unless by the practice of total abstinence. The taste of liquor, and the desire for it, in the majority of cases, once foreign, can easily be acquired primarily, and very much more easily if after a long term of gratification of this craving, after a temporary cessation, it is again encouraged. Full consent and willingness on the part of

the patient is therefore an indispensable requirement. Treatment for this addiction can only assist the individual who has a desire to be freed from its grasp, and make it possible for him to gain the mastery.

The essentials in the treatment of inebriety are Elimination, Nutrition, Suggestion, Reconstruction, and when required, Rest.

For elimination the mercurials are sometimes used, but salines seem to be more satisfactory. Large quantities of water should be combined with them so that the emunctories which have failed in their physiologically appointed work, the congested brain, liver, stomach, intestinal tract, mucous membranes and skin are to be relieved and stimulated to their proper functions.

Nutrition. In the treatment of inebriety the patient is not so apt to lose his appetite as in the treatment of other addictions, and a strong nutritious diet can usually be maintained with benefit. If the appetite is capricious or the stomach disordered by solid foods, beef tea, milk, cereals, or the prepared foods previously mentioned under Diet in Drug Addiction may be given.

Suggestion consists chiefly in cheering up the patient, assuring him that he will be cured and relieved from the need of stimulants, and impressed with the thought that he will not be compelled to stop drinking, but that he will be strong and manly, and will be able to conquer the desire, and keep it away from him.

Reconstruction is begun with the beginning of treatment. The method by which this is accomplished varies with the treatment employed, but as a general rule a few weeks preparatory treatment will be of benefit.

Rest, if necessary, sleep, change of surroundings, hypophosphites, beef, wine and iron, strychnia compounds, calisaya cordials, egg phosphates and tissue building remedies are indicated for this purpose.

After elimination of effete material from the tissues, toning up and improving nutrition, and reconstructing the forces of a weakened heart and nervous system, the real treatment begins.

The question is often asked, is a sanatorium necessary for the successful management of cases of inebriety, or can a home treatment be successfully employed. The answer is a qualified one. Every physician in general practice and in connection with it, can cure a certain class of selected cases without confining the patient and without recourse to asylum methods. Generally speaking, the only cases that require sanatorium treatment are those who have no good home in which they can be taken care of, or no one to attend to their wants and wait on them, or those so thoroughly wrecked by liquor that they are unable to follow the physician's instructions, and who need an overseeing hand to keep them under restraint.

Various methods of treatment for inebriety have been devised, and many remedies have been brought forward as specifics, but the true specific has never yet been discovered and never will be. No single remedy or combination of remedies will cure all cases. Differently tempered and constituted persons require different treatment. Inebriety must be treated as any other disease; with an ultimate and well defined object in view, and meeting indications en route as good judgment and experience may dictate.

Quick cures for drug and liquor addiction have in recent years appeared in considerable numbers, and while many of the profession have chosen to condemn these without a trial, others have taken them up and used them with considerable success. The Quick Cure method is best adapted to sanatorium work, as the treatment is vigorously applied and requires almost constant attention from physician or nurse. It is adapted to the treatment of persons who are continually under the influence of liquor, not necessarily intoxicated, and who have in many cases not sufficient self control to

permit them to make up their minds as to whether they wish treatment or not.

Similar treatments to the following are frequently advertised to the profession, which if not identical with this, are not sufficiently different to merit the investigation and expense necessary to ascertain their exact composition, if such is at all possible. Hyoscine Hydrobromate is the only drug that produces the symptoms as outlined under the FORTY EIGHT HOUR CURE for morphine addiction, and many of the advertised remedies produce these without variation.

After attending to the preliminaries the patient is placed on the following formula and an effort made to lessen the quantity of liquor taken. It should be continued from ten days to two weeks.

Formula A.

℞ Hyoscine Hydrobromate..... gr. 1-20.
 Strychnine Nitrate..... gr. j.
 Tr. Hydrastis Canad,
 Tr. Valerian.....āā fl. ʒ iiss.
 Tr. Capsicum..... fl. ʒ ss.
 Tr. Cinchona Comp.....q. s. ad. fl. ʒ viij.

Mix. Sig. Two drachms every four to six hours.

Under this treatment the patient will usually be able to get along with a much less quantity of liquor than was his custom, will improve in appearance and general health and will be in condition to receive

Formula B.

℞ Hyoscine Hydrobromate gr. j.
 Sol. Boracic Acid, 2 per cent..... fl. ʒ ij.
 Mix. Sig. Five to ten minims hypodermatically.

Directions for use. The directions given for the use of Formula One, under the FORTY-EIGHT HOUR CURE for Morphine and Opium, will apply to the use of this formula in the

treatment of inebriety. They are practically of the same composition. Formula A is discontinued when Formula B is begun, but is resumed again as hereafter directed.

Treatment with Formula B should be continued for from four to six days, but it is not essential to continue it through the night, but may be discontinued about 10 P. M. and resumed in the morning. After four days' treatment, before resuming in the morning, ask the patient whether a desire for drink is present, and as long as the answer is "Yes," continue the treatment. When the answer is "No," the treatment may be discontinued.

This class of patients frequently manifest more or less destructive inclinations, and should they become unmanageable, they should be placed under restraint. If great nervousness occurs they should be quieted with morphine in doses of 1-4 to 1-2 gr. This will not retard the treatment, as they are not addicted to morphine, and besides, they are taking the morphine antidote. After a short sleep they will awake refreshed and the treatment can be resumed. Should the pulse rise to 100 or over, do not crowd the treatment; wait a short time and it will be reduced. Continue then, in smaller doses, if deemed best. Occasionally a patient will be met with who requires but half the ordinary doses, while others require more than the usual. It is well therefore to use the remedy according to effect. The semi-intoxicated state should be maintained in a moderate degree throughout the treatment, except during the night, as before noted, always regulating the doses by the effects of the preceding one. These patients do not as a rule vomit during the treatment and retain their usual appetite. The same general rules as to baths, nurses and confinement of patient, given under the before mentioned opium treatment, apply to cases of this nature. After the desire for liquor has been removed, and the patient regained his normal mental condition, he may be allowed to occupy his time about the house or go out walking, care being taken that he does not become fatigued.

Now Formula A is again commenced and continued for several weeks longer, or as needed.

This treatment is a very successful one, having cured cases who were "graduates" of renowned institutions. It should not be used except under sanatorium facilities, or in apartments adapted for the purpose. For general use, by physicians in general practice or who do not devote any special attention to the treatment of this class of cases, the following methods are more suitable, and better adapted to their facilities.

The Ideal Inebriety Cure.

FOR LIQUOR, WINES AND ALL ALCOHOLIC BEVERAGES.

A treatment adapted to all cases. No special facilities required. This treatment is recommended in all cases where the patient is willing to be cured, such as come within the reach of the physician in general practice, who usually has neither the time nor facilities at his disposal, which are necessary for the correct administration of the treatment previously mentioned. The time required to effect a cure varies from ten to twenty days, according to the length of time the patient has been addicted to drink, the quantity consumed and his physical condition. The habitual tippler, the individual who drinks three to thirty times a day without becoming intoxicated, but whose physical condition demands a constant and oft repeated "bracer," requires more treatment than the person who indulges in a periodical debauch and perhaps for a month afterwards does not touch liquor. Carry one of the latter class over the time during which he

would become intoxicated and the greater part of the battle will be won.

The "sickening process" has always been a closely guarded secret in the treatment of inebriety. By this is meant the part of the treatment directed toward impressing the patient that liquor and his system are becoming antagonistic to each other. This is not accomplished through the medium of the regular treatment, but by the secret substitution of an emetic at the proper time. This emetic is usually Apomorphine.

This drug is given at the usual time for a hypodermatic injection, and is substituted for it. The patient is, of course, not informed of this change. When it is given in this manner, and a drink of liquor shortly afterward, the patient will attribute the resulting emesis to the treatment and will become convinced that the treatment is doing its work. Sooner or later he will, however, begin to doubt that he is being benefited, and he will have a desire to see whether he still cannot retain his customary beverage. In this wish he should be gratified as much as possible, but it should be arranged that the drink will be taken at about the time when it is customary to give a hypodermatic injection, and apomorphine again substituted. The result will of course be as disastrous as the first attempt, and there is usually no further doubt on his part. Should there be, the same procedure is repeated. Two or three times is usually sufficient. The patient should have sufficient confidence in the physician not to drink during the treatment, unless when allowed to do so, but he may, of course, furnish his own whiskey.

Formula A.

℞ Hypo. Tablets Gold and Sodium
Chlorideãã gr. 1-10.

Sig. One tablet injected hypodermatically three times daily, at intervals of six to eight hours.

Formula B.

℞ Atropine Sulphate..... gr. 1-3.
 Strychnine Nitrate..... gr. 1-2.
 Fl. Ext. Erythroxylon Coca,
 Tr. Cinchona Compound.....āā fl. ̄ iss.
 Glycerine, C. P.....q. s. ad. fl. ̄ iv.

Mix. Sig. One drachm every four hours, during waking hours.

In order to facilitate the cure the patient should be willing to quit work a few weeks while taking treatment, but it is not necessary to confine him to the house. Moderate exercise is beneficial. Formula B can be entrusted to the patient, but it must be taken regularly.

At the most convenient time during the day the patient should call upon the physician for his hypodermatic injection of Formula A, the time being so arranged to suit both physician and patient. At breakfast, after noon and in the evening will usually be convenient. The intervals, as stated, should be from six to eight hours. Should the patient become very nervous or show signs of delirium, stop the treatment and give 1-4 grain of morphine sulphate to quiet him. Resume the treatment as soon as thought advisable and continue it for a period of ten to twenty days, or until the patient expresses himself as feeling free from the desire or need of liquor. During the first part of the treatment, three or four days, small quantities of liquor may be allowed. Usually one-half ounce, three or four times a day. This applies only to the continual drinker, and not to the periodical, as the latter can well do without it. After four days of treatment, in all cases, at one of the regular calls for a hypodermatic injection, ask him whether he has a desire for liquor. The continual drinker will probably say he has, and if he has been taking some in small doses, tell him you would like to see him take a good big drink, such as he was accustomed to take. If he has not taken liquor during the treatment, this remark will be omitted, but whether he says he has

a desire or not, tell him you would like to see whether the treatment is acting properly, whether it is strong enough or whether it has already produced an antagonism in his system toward liquor.

Now, instead of giving him the usual injection of Formula A, substitute 1-10 grain of Apomorphine, and follow it within a few minutes with the drink. Never give the drink first, as something might occur which would delay or prevent the giving of the apomorphine, and he would thus find no untoward effect from the liquor. If the apomorphine is given first and the drink delayed too long, so that nausea occurs before the liquor is given, it can be attributed to another cause. Due attention should be paid to these details and to have everything ready. Have a basin or vessel conveniently hidden near by, so that the patient will not know that you made preparations for what will occur, and wait for developments. If the dose was large enough, free emesis will occur in a short time. Should it not cause vomiting, merely nausea, tell him that the treatment is acting all right and that after a few days more treatment, he can probably not retain liquor but would have to vomit. In a few days repeat the experiment, taking precaution to give somewhat of a larger dose, regulating it according to the effect produced by the former dose. Tartar Emetic is sometimes used for this purpose, mixing it with the liquor, but this allows the patient to form the opinion that you have drugged his liquor, and thus his confidence in you will be shaken. By the other method he may furnish his own liquor. Caution him not to drink unless in your presence. Examine his heart after he has taken the drink and tell him that it must be carefully watched when he takes a drink, as it might need immediate attention. Impress upon him that should he drink while away from you, his heart might suddenly need attention and as you would not be at hand the results might be unpleasant. The reason for these admonitions are obvious.

After he has been thoroughly sickened several times he will probably refuse to touch liquor, even the smell or sight of it is likely to produce nausea. Do not hesitate to make him extremely sick; the nearer death he will think himself, the more certain the cure.

Both formulae are given in conjunction during the ten to twenty day period, but after the disgust for liquor has been firmly established, and the patient seems to be getting along well without the use of stimulants, the injections may be discontinued, but the remedy, Formula B, should be continued for a week or more afterward. After the sickening process is begun, all liquor should be discontinued. The bowels usually remain normal, but if constipated, use sodium phosphate, plenty of it; nothing else, except all the water he can drink. After a cure, do not fail to impress your patient with the necessity of avoiding the association of intemperate companions, the frequency of saloons or bar-rooms, and never to touch, taste or handle. Tell him that as he once acquired the taste and desire for liquor, he can do so again, but as he is free from it now, he should assert his manhood and conquer his bitterest enemy.

This treatment, properly administered to a person willing to be cured, who will co-operate with the physician and obey instructions, will do wonderful work, and cannot be too highly recommended.

A Home Cure for Inebriety.

There is more or less of a demand for a treatment for habitual drunkenness, which can be taken or administered without the direct supervision of a physician, but it is evident that such a treatment can at best only assist an individual who will make an honest effort to overcome the recurrent desire for stimulants. In this connection a few words may be said in reference to the numerous home cures which are advertised as specifics for drunkenness. Some of these, the majority perhaps, are said to be capable of eradicating the desire for liquor and establish an antagonism against it, without the consent or even knowledge of the person to whom it is administered. These claims are in direct opposition to the teachings of the best authorities on diseases of the nervous system and entirely contrary to the experience of physicians who have made the treatment of chronic alcoholism a special study and treated hundreds of cases. It is quite probable that the majority of these claims are fraudulent, and in many instances devised to ensnare the unfortunate wives and children of drunkards, and extract from them the little means they manage to possess. Any drug which can so affect the nervous structure of a person that a desire and craving for liquor can be eradicated without the consent or assistance, or even against the will of the person to whom it is given, must be powerful indeed; probably poisonous, and if so, dangerous. Some of them are however claimed to be "entirely harmless," and this statement I will not dispute. It is probably true.

The following method of treatment commends itself to the ordinary cases of habitual drunkenness, and will afford substantial assistance to any one possessed with an honest desire to be freed from the craving for stimulants, and who

will make an effort in that direction. To the person who is unable to make up his mind whether or not he wishes to quit, its action will serve no purpose. The more moderate the drinker and the less quantity consumed during the intermission between the periodical debauch, the easier will be the cure. This treatment is not as powerful nor as rapid as the foregoing, consequently the hardened inebriate, the one who is unable to control himself or exercise any will power, will make better progress under the former. As a preliminary to either of the preceding treatments, it is of value.

Formula A.

R	Atropine Sulphate.....	gr. ss.
	Strychnine Nitrate.....	gr. j.
	Tr. Capsicum	fl. 5 ij
	Tr. Pulsatilla.....	fl. 5 iij.
	Fl. Ext. Erythroxylon Coca.	
	Tr. Hydrastis Canadensis.....	fl. 5 ij.
	Tr. Serpentaria	fl. 5 j.
	Tr. Cinchona Compound.....	fl. 5 iij.
	Elixir Aromatic.....	q. s. ad. fl. 5 xij.

Mix. Sig. Two drachms before each of the three daily meals.

Formula B.

R	Fl. Ext. Passiflora Incarnata.....	fl. 5 iij.
	Fl. Ext. Avena Sativa.....	fl. 5 ij.
	Elixir Aromatic.....	q. s. ad. fl. 5 vj.

Mix. Sig. One drachm at 9 A. M., 3 P. M. and before retiring, or about 9 P. M.

Continue both formulae for four to eight weeks, according to the progress of the case. Patients need not stop work during treatment.

Other Methods of Treatment for Inebriety.

In the following pages other and well known methods for treating inebriety will be detailed, all of which are credited with sufficient merit to warrant their use. Some of them have had their origin and are successfully employed in the practice of physicians of the highest professional attainments, men who have given the subject much study and attention, and whose objects in giving them to the profession at large is none other than to encourage more thorough investigation and attain more definite results.

Bellevue Hospital Treatment.

Over four thousand cases of acute alcoholism are received in Bellevue Hospital, N. Y., every year. A certain percentage of these express a sincere desire to be relieved from the tendency they have to indulge in periodical debauches, and to such the following treatment is given. It is the result of ten years' experience in the care of these cases.

After the effects of an acute attack of alcoholism have disappeared, the following hypodermatic injection is given. Each dose contains:

℞ Strychnine Nitrate..... gr. 1-15.
 Atropine Sulphate..... gr. 1-300.
 Distilled Water..... ℥ x.

Mix. Sig. Inject three times a day, the first day of treatment.

The second day the following is given. Each dose contains:

℞ Strychnine Nitrate..... gr. 1-20.
 Atropine Sulphate..... gr. 1-200.
 Distilled Water..... ℥ x.

Mix. Sig. Inject three times a day for the second day of the treatment.

Internally, patients are given in connection with the injections, the following, each dose containing:

℞ Tr. Cinchona Comp. ℥ xv.
 Tr. Capsicum..... ℥ ss. to j.
 Tr. Solanum Carolin..... ℥ ij.
 Bitter Wine of Iron..... q. s. ad. fl. 5 j.

Mix. Sig. One drachm three times daily.

Nourishment. One-half to one glass of milk, (hot or peptonized,) alternating with hot beef tea or broth, every two hours.

Hypnotic. Used first and second nights if needed.

℞ Potassium Bromide gr. xxxij.
 Chloral Hydrate..... gr. xvj.
 Tr. Valerian..... fl. 5 j.
 Water..... q. s. ad. fl. 5 iv.

Mix. Sig. Hypnotic. One ounce at a dose, repeated as needed.

The stomach is washed out if necessary, to remedy any catarrhal disturbance, and they are given an abundance of nourishment. Two days of this treatment usually finds them with the desire for liquor gone, and they are discharged with the following mixture, and directed to report weekly.

R	Tr. Columbo.....	fl. ʒ j.
	Tr. Capsicum.....	℥ xv.
	Apomorphine	gr. 1-3.
	Tr. Nux Vomica.....	fl. ʒ j. to iss.
	Tr. Cinchona Comp.....	q. s. ad. fl. ʒ iv.

Mix. Sig. One drachm in water after the three daily meals. This is continued one month, when he may discontinue taking this preparation, but he is kept supplied with it, and directed to begin taking it the minute he feels a desire for liquor, and report at once. He is then again given the hypodermatic injections as before.

By this many persons are reclaimed and sent out with confidence in themselves and hope for the future, with a staff upon which to lean in case of weakness.

The same treatment is also employed in treating morphine addiction, but in these cases it must be continued much longer and sometimes must be modified by adding bromides or gradually reducing the morphine. The house surgeon reported one case in which the morphine was stopped immediately, although thirty grains were taken daily. The patient did not suffer in the least. From an article by Dr. C. L. Dana, New York.—In the "*Post Graduate*."

Note:—Having seen the same treatment outlined in another medical journal in which the dose of strychnine in the first formula was given as 1-50 grain, and the dose of Tr. Solanum in the third formula as ℥ xij., I wrote to Dr. Dana, and was informed by him that the formulæ as I have given them here are correct. J. D. A.

A "Whiskey Cure Institute" Treatment.

The following formulae were obtained from a physician who was for a number of years connected with a high priced "Institute," located in New York.

On reception of patient, he was given a thorough bath and sweat, similar to the well known Turkish baths. This was followed by a thorough evacuation of the bowels and flushing of the colon with three quarts of water as warm as could be borne. This usually left the patient in a relaxed condition, when the following hypodermatic injection was given:

℞ Strychnine Nitrate..... gr. 1-40.
Atropine Sulphate..... gr. 1-200.
Aqua Destil..... q. s. to dissolve.

Mix. Sig. Give this quantity at each injection, three times a day for four days, twice a day for eight days and once a day for four days.

Together with this, the following pill:

℞ Quinine Sulphate..... gr. lxxx.
Zinc Oxide..... gr. lxxx.
Powd. Capsicum..... gr. lxxx.
Strychnine Sulphate..... gr. j.
Acid Arsenious..... gr. 1-3.

Mix. Ft. pil No. xl.

Sig. One pill, three times a day, alternating with hypodermatic injection. This is given throughout the treatment. The pill is best given half an hour before the usual time for meals; the injections midway between meals and retiring, while given three times daily, midway between meals when given twice, and a few hours after breakfast when given once.

If patient cannot sleep the following is given:

R Tr. Aconite Root..... ℥ v.
 Tr. Capsicum fl. 3 ss.
 Tr. Opium Deodorized,
 Fl. Ext. Hyoscyamus.
 Chloral Hydrate.
 Potassium Bromide āā 5 ij.
 Peppermint Water q. s. ad. fl. 5 iv.

Mix. Sig. One-fourth to one-half ounce at bed-time.
 Use as little as possible, and dilute freely with water.

If patient becomes much excited or borders on delirium tremens, the following is useful:

R Hyoscine Hydrobromate..... gr. 1-200 to 1-100
 Hypodermatically.
 Repeat pro re nata.

Patients receive abundant nourishment, soups, broths, beef tea, milk, milk foods, peptonized milk, and plenty of water in which sodium phosphate has been dissolved in the proportion of one drachm to the pint.

(Remarks.—As a hypnotic, in the treatment of inebriety, nothing excels the well known Bromidia. Its action is prompt and it leaves no unpleasant after effects. J. D. A.)

Another "Institute" Cure.

In the State of Indiana there is in operation a sanitarium dedicated to the cure of drunkenness and nervous diseases, in which the following line of treatment is followed:

After a preliminary treatment such as was detailed in the foregoing treatment, the patient is placed in a room and supplied with a bottle of good liquor with instructions to help himself to as much as he wishes. At this time the treatment is begun and the patient receives, four times daily, a hypodermatic injection of the following composition:

℞ Chloride of Gold and Sodium..... gr. 1-10.
Strychnine Nitrate..... gr. 1-40.

Mix.

In connection with the above he receives the following:

℞ Chloride of Gold and Sodium..... gr. xij.
Ammonium Muriate..... gr. vj.
Strychnine Nitrate..... gr. j.
Atropine Sulphate..... gr. 1-4.
Fl. Ext. Cinchona Comp..... fl. ʒ iij.
Fl. Ext. Erythroxylon Coca..... fl. ʒ j.
Glycerine..... fl. ʒ j.
Distilled Water..... fl. ʒ j.

Mix. Sig. One drachm every two hours while awake.

The physician in charge sees the patient four times a day and increases the doses of gold and strychnine in the injection until the symptoms show that the patient is receiving all he can bear. The first day the patient usually drinks heavily of the whiskey left with him, but during the second day he begins to lose his desire for it. He will usually refuse to take any by the third or fourth day. The treatment is continued from three to six weeks, increasing or lessening the doses according to the symptoms produced, always giving

the gold and strychnine to the "limit." The atropine causes the pupil to be dilated, with some dimness of vision and a slight irregularity of the gait in walking.

The strychnine causes a twitching of the muscles, especially of the neck and jaws, and headache ensues. The gold causes a red, irritating eruption to appear in the course of a week or two. It appears all over the body. Regard for these symptoms will indicate the dosage.

The theory of this treatment effecting cures is as follows :

The powerful poisons given disturb the nerves so profoundly that the desire for liquor is lost in the same manner as sometimes occurs after a fit or an attack of certain diseases. This breaks the tyranny of the habit and enables the patient to start on a career of total abstinence without any feeling of distress from the lack of his stimulant. If he begins tippling, he will soon acquire the taste and desire again. The periodical drinker is said to be the most likely to relapse and fall back into his old habits.

(Remarks. The dose of gold and sodium chloride in these prescriptions is undoubtedly too large to be safe, and much larger than is necessary for the production of its physiological effect. Doses of this size would undoubtedly in the majority of cases, produce gastro-enteritis, vomiting, digestive disturbances and reduce the oxidizing power of the red blood corpuscles to a point approximating if not exceeding the danger point. The best authorities on therapeutics do not advise its administration in larger doses than 1-10 to 1-8 grain. J. D. A.)

Dr. C. F. Chapman of Chicago, desirous of becoming acquainted with the methods employed in Gold Cure Institutions, obtained a position in one of them for this purpose. He found that as a "Tonic" they used a preparation of the same composition as the formula just given, with the addition of Aloin, gr. j, and Hydrastin, gr. ij. Dose, one drachm every two hours from 7 A. M. to 9 P. M. In connection with this, the patient received an injection containing 1-40 gr. Strychnine Nitrate at 8 A. M., 12 M., 4 and 8 P. M. This quantity was gradually increased until strychnine effect was very well marked. Combined with the strychnine solution, the patient was given three drops of the following solution.

R Gold and Sodium Chlor..... gr. iiss.
 Aqua Destil fl. ʒ j.

Mix. Draw three drops of this solution into the syringe containing the strychnine solution. The mixture produces a beautiful golden color, to which the attention of the patient is called for its psychic effect. It leaves a yellow stain on the skin after the needle has been removed. Dr. Chapman has had experience in 300 cases with the treatment outlined, with good success. Remarks. When such large doses of the Gold and Sodium Chloride are successfully administered by a reputable physician, it may seem unwarranted to criticise, yet Prof. Waugh does not hesitate to do so in his comments on the treatment. It may possibly be that the physical condition of a person addicted to the excessive use of stimulants, counteracts the effects of the gold salt to a certain extent, thus rendering the system immune to small doses. At any rate, the doses are very large, and if used, its action should be closely observed.

Prof. W. F. Waugh, of Chicago, has also employed the foregoing treatment, in a modified form. For the twelve grains of Gold and Sodium Chloride, he substitutes one grain of Bichloride of Mercury, giving 1-48 gr. of this drug

to the dose. Instead of giving strychnine hypodermatically he advises the use of the alkaloid caffeine, dissolved in distilled water by the addition of sodium salicylate. This drug greatly assists the solubility of caffeine. From one to six grains are given hypodermatically four times a day. If the patient's means permit it, he uses mandragorine instead of atropine, in case the dose of that drug is not sufficient in the tonic, the former being more efficient and less unpleasant. If in a few days the patient's appetite for liquor does not weaken, apomorphine is added to the liquor or given hypodermatically, beginning with 1-30 grain and gradually increasing it to 1-10 grain.

An important part of his treatment now follows. For the free flushing of the emunctories, the following preparation is used.

R Potassium Acetate 5 iv.
 Potassium Bromide gr. xl.
 Potassium Nitrate gr. xv.
 Potassium Carbonate gr. xx.

Mix. Dissolve the above in one or two quarts of carbonated water, (plain soda as dispensed by druggists) and let the patient drink this quantity every day. The difference in the quantity of carbonated water used depends on the capacity of the patient.

The diet should be non-stimulating, plenty of fruit juices, vegetable acids and milk, but no rich foods or condiments. This treatment is continued until the patient is well and strong and able to depend upon himself.

Another Gold Cure.

The following treatment for inebriety is employed in a certain institution near New York City, under the supervision of a well known physician. Although the "gold cures" were looked upon as fraudulent when they first appeared, it is worthy of note that the drug is used and relied upon in some of our best institutions, and may be said to be one of the most important factors in effecting cures.

In detailing his method of treatment, the doctor assumes that the patient is sober on his arrival at the institution and directs treatment as follows.

Four times a day, inject hypodermatically, a solution containing 1-30 grain Strychnine Nitrate to ten minims of distilled water. Begin by giving five minims and note results. If five do not produce physiological effects, gradually increase the dose to ten. If the patient is willing to remain any length of time necessary for a cure, not wishing a "rush cure" this dose of strychnine nitrate is never exceeded. The first day the patient receives about four grains of calomel, half an hour after breakfast, and half an hour before dinner a liberal dose of sulphate of magnesia. If the bowels do not respond liberally in three or four hours, repeat the salts. If the patient becomes irritable, hankers after a drink or complains of a bad taste in the mouth, repeat the calomel. This may be done any time during the treatment.

Tonic.

R	Gold and Sodium Chlor.....	gr. ss.
	Tr. Gentian	fl. ʒ x.
	Tr. Cinchona Comp.	fl. ʒ iv.
	Tr. Columbo	fl. ʒ iv.
	Tr. Hydrastis Canad.	fl. ʒ x.
	Glycerine	q. s. ad. fl. ʒ iv.

Mix. Sig. One drachm four times a day.

If the patient insists on drinking after a day or two, give him a small drink at the usual time for receiving the injections. After doing this once or twice, add 1-20 to 1-15 grain of apomorphine to the strychnine solution and inject. This usually has the desired effect. If the patient is very nervous, the following mixture is given.

R Sodium Bromide gr. xv.
 Chloral Hydrate gr. v.
 Tr. Hyoscyamus gtt. xx.
 Elix. Aromatic q. s. ad. fl. 5 j.

Mix. Sig. Take at a dose. Repeat as required.

Occasionally a patient will be found who, though compelled to vomit after an injection containing apomorphine, will persist in drinking. These cases are given milk punches and beef tea, and an injection containing in each dose. Strychnine Nitrate, gr. 1-20; Atropine Sulphate, 1-100, and Morphine Sulphate, gr. 1-4. This is repeated every four hours and the stomach soon rebels, and the trouble is over. Never attempt to break off liquor too rapidly, or delirium tremens may ensue, but use judgment and be guided by the condition of the patient. Keep a close watch over him for the first four days. Feed good, advise moderate exercise, promote cheerfulness and encourage the patient.

Dr. Matchette's Cure for Chronic Alcoholism.

The following treatment for persons addicted to the use of whiskey has been used for more than twenty years in the institution of the originator of the same, Dr. A. C. Matchette, Bourbon, Ind., according to an article written by him and published in a medical journal, several years ago. So successfully has this treatment been employed in the various institutions under his supervision, that only about 2 per cent. of failures have been recorded, and these have been among patients who refused to submit to the full treatment. In the experience of Dr. Matchette, cures are more easily effected when a number of persons take the treatment at once, as it enables them to find companions who are in sympathy with them, spurs them on to do their best toward assisting the treatment by creating a friendly rivalry between themselves, and prevents the solitude more or less experienced by a single patient under treatment.

On entry of a patient he receives a thorough hot bath. If necessary he is given a cathartic, using the Comp. Cathartic Pill, Imp.

He is then put on the following injection :

R Hydrastine Sulphate..... gr. ij.
 Aqua Destil..... fl. ʒ j.
 Mix. Filter.

Sig. Inject from five to six minims into the arm four times daily, increasing the quantity to twenty or twenty-five minims within the first fortnight, if well borne, and then continue until cured.

The first ten to twenty-five days he receives also, if nervous and broken down, the following :

- ℞ Fl. Ext. Kola.
 Fl. Ext. Celery.
 Fl. Ext. Valerian.
 Fl. Ext. Gentian.
 Fl. Ext. Cinchona Rub.
 Fl. Ext. Cannabis Indica.
 Fl. Ext. Erythrox, Coca.
 Fl. Ext. Cypridium.....āā fl. ʒ j.

Mix. Sig. One teaspoonful every two hours.

If necessary, on account of digestive inactivity, add to the above, Pure Pepsin, ʒ ss., and Hydrastine Muriate, ʒ ss.

The above is alternated with the following for four or five days, then the time between the doses of the following are lengthened as found best.

- ℞ Hydrarg, Bichlorid..... gr. iv.
 Sodium Bromide ʒ ij.
 Potassium Bromide..... ʒ iss.
 Potassium Iodide..... ʒ iiij.
 Ammonium Chloride ʒ iiij.
 Water..... Oj.

Mix. Sig. One-half teaspoonful every two hours, taken in a strong decoction of coca leaves.

Treatment is to be continued until the patient is discharged cured, usually in about three weeks. During the first 12 to 72 hours the patient is furnished with a generous quantity of the best liquor, until he declines to use it, which is often within the first day. Some will be determined to continue the use of liquor, and boast of such determination, but they are usually the first to refuse it. Others will say little but will tenaciously cling to their flask, making one effort after another to retain a drink, until finally, sometimes after vomiting twenty times or more, they come to the conclusion that they have enough.

The treatment must not be discontinued when the patient refuses liquor, even if the taste or smell of it causes vomiting, but it must be continued until the physician has determined that the cure is complete. Vast differences exist in patients and each case must be treated according to the particular demands thereof, varying the remedies employed as indicated. These variations cannot be defined or fully described, but the physician treating a number of patients will observe them, and experience will improve and mature his judgment. The variations found will usually depend on age, weight, physical condition and ability to bear the treatment either lighter or heavier, as the case may be. Good nourishment is necessary, using cereals, prepared foods, milk, etc. Cheerful associations are highly beneficial and should be encouraged as much as possible.

(Remarks.—In the hypodermatic injection given, instead of increasing the dose to 20 or 25 minims, I would suggest that stronger solutions of the drug be procured. An injection of 25 minims is quite bulky. The dose of *Cannabis Indica* is rather large, in the second prescription, and as this is a dangerous drug its action should be watched, and modified accordingly. J. D. A.)

Treatment for Acute Alcoholism.

It is frequently very important that a person under the influence of alcoholics should become sober as soon as possible. Business affairs may be neglected or social engagements forgotten during the period of indulgence, and it often devolves upon friends of the habitual drunkard to assist him to the possession of an unclouded brain and clear intellect, and see to it that his appearance at least is respectable.

If he has recently drank intoxicants, the first indication is an emetic. This may be accomplished by drinking freely of warm water, tickling the fauces with a feather or introducing the forefinger as far down the throat as possible. Should these measures fail, sulphate of zinc, twenty grains dissolved in half a glass of warm water, should be given. If this is not at hand a teaspoonful of mustard will prove an excellent substitute. Tartar emetic by the mouth or apomorphine hypodermatically may have to be used if all else fails. After free emesis, the vegetable acids, especially lemon juice, will prove grateful and beneficial.

If he has not drank recently and the liquor has circulated through his system, emetics are of no value. Here the Muriate of Ammonia, 20 to 30 grains, dissolved in half a glass of water, will give splendid results, as will also ounce doses of freshly prepared Liq. Ammon. Acetate. Either of these remedies may be repeated in half an hour or less.

As the emetics will only relieve the stomach of its contents, and as the intoxicated person is always under the influence of alcoholics which have been absorbed, the preparations of ammonia just mentioned should be administered after the stomach has been emptied.

Another method by which the effects of alcoholics can quickly be dispelled is the hypodermatic injection of 1-3 to 1-2 gr. Morphine Sulph. It may be combined with 1-15 or even 1-8 of Strychnine Nitrate. After a short nap, the person can be awakened with his senses comparatively normal. A thorough sweating will facilitate matters considerably.

TOBACCO ADDICTION.

As in other addictions, the person desiring to free himself from the use of tobacco must exercise his will power to the full extent.

No remedy will cure any one so thoroughly that the habit may not again be easily acquired, although if ordinary efforts are made to avoid tobacco for several months, it will be comparatively easy to let it alone thereafter.

On account of the numerous remedies advertised to the laity by different firms, there is a certain, although limited, demand made upon physicians for medicine of this character.

The following formula is a good one, and if left to the patient entirely, if he makes an effort to use it regularly and does not force tobacco on himself, will cure seventy-five per cent. of cases. To those who require additional treatment, add sufficient Tartar Emetic to the remedy, or give it separately, to sicken them. Formula:

R Atropine Sulphate gr. 1-8.
 Tr. Quassia,
 Tr. Columbo..... āā fl. ʒ j.
 Tr. Humulus.
 Sp. Vini Rect..... āā fl. ʒ ss.
 Aquaq. s. ad. fl. ʒ iv.

Mix. Sig. Teaspoonful every three hours while awake.

If for chewing, let the patient have fine cut (no plug) two or three times a day for a few days. The atropia causes dryness of the mouth and fine cut usually disgusts them. If not, use the Tartar Emetic.

If for smoking, allow a short smoke several times daily, not more than one-fourth of a cigar, to be re-lit when another smoke is taken. If a cigar smoker, give him a strong pipe; this will not be as pleasant as a cigar. After a few days stop smoking altogether, but if there is difficulty in stopping, use the emetic as directed.

The following is the formula of a well known proprietary remedy in tablet form, which is recommended for both Alcohol and Tobacco. Formula:

R	Gold and Sodium Chlor.....	gr. j.
	Strychnine Nitrate	gr. 1-3.
	Nitro Glycerine	gr. 1-10.
	Quassin	gr. iss.
	Atropine, alk.....	gr. 1-10.
	Oleores Capsicum	gr. vj.
	Tr. Digitalis	gtt. xl.

Mix with any suitable excipient and make Twenty pills or tablets. Sig. One tablet or pill before each meal.

The above directions regarding the use of tobacco apply to this treatment.

Another formula, somewhat similar to the above.

R	Gold and Sodium Chlor.....	gr. iv.
	Strychnine Nitrate	gr. ij.
	Nitro Glycerine	gr. ss.
	Ext. Digitalis fld.....	℥ xx.
	Pulv. Capsicum	gr. xxv.
	Salicin	gr. c.
	Cinchonidin. Sulph.....	gr. c.

M. Ft. Pil No. 100.

Sig. One before meals.

Continue using tobacco in somewhat reduced quantity for a few days, then make an effort to stop it. Continue treatment until free from the desire for tobacco.

Another formula for Tobacco Addiction:

R	Apomorphine Muriate	gr. iv.
	Ac. Muriatic Dil.....	fl. 5 ij.
	Tr. Nux Vomica.....	fl. 3 ss.
	Aqua Dest.....	q. s. ad. fl. 5 viij.

Mix. Sig. One half to one teaspoonful every two hours.

GOITRE.

A thoroughly reliable treatment for this obstinate affection will undoubtedly be appreciated by the majority of physicians. The following formulae, if properly and persistently used, will cure all ordinary cases of goitre and benefit all others. I have used this treatment in numerous cases with entire satisfaction, effecting cures which have remained permanent for several years.

Injection Fluid No. 1.

R Pure Carbolic Acid..... fl. 5 ss.
 Aqua Destil. fl. 5 j.
 Ft. Solution and add
 Pure Glycerine fl. 5 ss.
 Shake well and add
 Tr. Iodine fl. 5 ij.

Mix.

Injection Fluid No. 2.

R Iodoform gr. xl.
 Pure Glycerine fl. 5 iij.

Mix thoroughly in a glass mortar and pour into a colored bottle.

Local Application.

R Tartar Emetic 5 ss.
 Aqua Destil. fl. 5 ss.
 Ft. Solution and add
 Tr. Iodine fl. 5 iij.
 Tr. Benzoin Comp. fl. 5 ij.

Mix.

For treating all varieties of goitre except cystic, vascular and exophthalmic. With a hypodermatic syringe inject one to five minims of injection fluid No. 1 into the substance of the goitre once each week. With the same instrument inject from two to ten minims of injection fluid No. 2 into

the substance of the goitre once each week. Commence with fluid No. 2 three days after commencing with fluid No. 1, and alternate with them, not using one of them in less than three days after using the other. It is not necessary to plunge the needle deep into the enlarged gland, but be sure it has entered before injecting. Insert the needle, instruct the patient to swallow; if properly introduced the needle will follow the goitre in its upward movement. If the patient is under twenty years of age, one to four minims (according to age), of No. 1 will be sufficient. Where the patient is older, and especially if of long standing, it will in some cases be necessary to use the maximum dose of both fluids. If the goitre is bilateral inject one side at one time and the other side at the next time, alternating in this manner until cured.

The local application is used at the same time. Instruct the patient to paint the skin covering the goitre twice a day until considerable vesication is produced, then once a day or as necessary to keep up considerable irritation.

CYSTIC GOITRE.

Evacuate the contents of the cyst with the hypodermatic syringe, and then inject into the cavity about five to eight minims of injection fluid No. 1, and allow it to remain. Repeat twice a week until cured.

These cases usually get well in from two to six weeks. Use the local application same as in the other varieties.

VASCULAR GOITRE.

In treating this form of the disease use the local application same as in the other varieties. Every eight days inject from two to five minims of injection No. 2 into the substance of the goitre, and every eight days inject from one to five minims of injection No. 1 into the tissues just beneath the skin covering the goitre, and not into the substance of the gland as in other varieties. Make an injection every four days, alternating with the two fluids.

Remarks :—In preparing the formulae add the different ingredients in the order named, and in preparing No. 1 add the iodine slowly, shaking constantly. In using injection No. 2 pour into a small bottle the desired amount and add an equal quantity of pure water and shake well before filling the syringe. This is done to dilute it so it will pass through the needle. If you use a larger needle this will not be necessary. These injections should be prepared freshly as often as every four weeks. Keep the needle clean, smooth, sharp and free from rust. Always see that the air is out of the syringe before injecting. In case there is no improvement in four weeks, don't become discouraged and quit, as the enlargement may disappear very rapidly after it begins to be reduced. The average time required varies from eight to twelve weeks. Don't imagine that because the treatment is simple, that it is without merit, but give it a fair trial, and you will be more than pleased.

Other Remedies for Goitre.

THE CHLORIDE OF AMMONIUM TREATMENT. This method of treatment was first suggested on account of the well known absorptive action of the Chloride of Ammonium, when used in the treatment of enlarged glands, either parotid or lymphatic; the local action of the Red Iodide of Mercury being no doubt largely contributory to the good results often obtained. The directions for treatment are as follows:

The Chloride of Ammonium should be given in eight or ten grain doses, three times daily, and continued for weeks or months. Locally use an ointment containing Red Iodide of Mercury, grs. x to xx to the ounce of Vaseline, rubbed well over the whole surface of the goitre once a day until slight vesication appears. Discontinue then and repeat when the vesication produced by the former application has disappeared. This may require two or three weeks. It should be noted that this ointment should not be applied to the vesicated

surface, or where any abrasion of the skin exists, on account of its powerful action constitutionally. As an alternating remedy the Iodide of Potassium in five grain doses, three times a day, may be given one week out of every four. Continue in this manner until satisfactory results are obtained.

DR. CHAVETTE'S GOITRE REMEDY.

The following prescription was used for many years by Dr. Chavette, of Chicago, with such success that he gained both fame and fortune.

℞ Zinc Sulphate,
 Acid Salicylic..... āā 5 ij.
 Iodoform,
 Acid Boracic..... āā 5 iij.
 Acid Oleic..... 3 viij.

Mix and keep at boiling heat for four hours, then pour off the liquid and after cooling, bottle and cork well.

Sig. Apply to the enlarged gland with slight friction, twice daily until slight desquamation occurs, after which apply once daily until the enlargement is entirely reduced. Cures effected by this method are said to be permanent.

FUCUS VESICULOSUS. This is a remedy that has at various times been brought forward as a remedy for Goitre, indeed Dr. R. N. Foster, of Chicago, claims it to be the only remedy that he has ever known to cure Goitre. The drug is very likely to deteriorate, and many preparations of it are unreliable. The dose varies according to the preparation used and should be taken according to dosage given for the particular preparation employed. It should only be purchased from the most reliable parties.

ELECTRIC TREATMENT. The treatment of Goitre by cataphoresis is a safe and very often effectual means by which goitre can be cured. A strong solution of potassium iodide is applied to the tumor on a well wetted pad, attached to the cathode of a galvanic battery. The positive pole may

be placed at the back of the neck or other convenient locality. The opposite side of the tumor is a good location for the positive pole. A current, from five to fifteen milliamperes, is to be used. The treatment should be given every other day, unless the parts become too tender, and should continue about fifteen minutes at a time.

The action of the electric current is to liberate the iodine from the iodide of potassium, and the iodine being an electro negative body is repelled from the cathode or negative pole, as like poles repel and unlike poles attract. The potassium, being electro positive, remains on the negative electrode while the iodine is passed toward the positive electrode, and if the action were continued long enough the free iodine would be found on the positive electrode. Proof that it is absorbed can also be shown by simply reversing the electrodes. Free iodine will at once appear under the positive electrode where the negative formerly was applied, and on reversing again to the first position the iodine at once disappears. Change of current will produce the same effect without removing the electrodes.

This treatment causes no discoloration of the skin other than the hyperaemia produced by the current. This treatment should be continued until the growth of the gland is sufficiently reduced. The improvement is not rapid but will in many cases prove satisfactory. Persons with goitre are usually acquainted with the usually accepted theory that goitre is incurable, and any means that shows a reduction will in the majority of cases be willingly continued. Diminution in size is usually first noticed by the patient on account of the collar worn, and the measurement sometimes recommended is entirely unnecessary. The patient will notice a reduction before the tape line would indicate it.

NASAL CATARRH.

Acute and Chronic.

There is no dearth of literature on Catarrh. Medical text books and the periodical publications which give space to the consideration of this disease are abundant evidence that the authors of the former and editors of the latter are in a measure endeavoring to cater to the evident demand for information on the subject.

To any careful observer, and all physicians should be such, it must be apparent that catarrhal diseases of the Nose and Throat, with their consequences, complications and reflex disturbances are responsible for many of the ills that flesh is heir to, and that the intelligent treatment of them becomes an absolute necessity to any physician who assumes the responsibility of accepting a case for treatment. The large and remunerative practice so generally enjoyed by physicians who give special attention to the diseases of the Nose and Throat is evidence sufficient that this class of affections can be made to play a most important part in the practice of every physician who gives them somewhat more than passing attention.

Probably no part of the human body has been so abused and maltreated as the upper air passages. Every malodorous irritant, sold under the guise of an antiseptic powder, has been blown, syringed, douched and sprayed into these cavities, until physicians have become discouraged and do not hesitate to assert that Catarrh cannot be cured.

There seems to be a prevailing opinion in the minds of many of the profession that the correct treatment of these diseases implies the use of certain expensive and elaborate apparatus, and the possession of more than an ordinary degree of skill to use them properly, so that the outcome in many instances has been that the general practitioner has allowed his cases to drift to the specialist, if indeed he has not had the magnanimity to direct them there.

By a moderate amount of study and diligent practice, by perseverance in the use of the methods at hand, the general practitioner may overcome many imaginary difficulties that seem to stand between him and success, and he will be richly rewarded for his time and labor so spent.

The instruments that we may class under the list of those strictly necessary are: a good lamp with reflector or a condenser, a head mirror, a nasal speculum, a tongue depressor and a laryngeal mirror. As time passes and the practitioner becomes more skillful in their use and more bold in his undertakings, other more elaborate instruments may be added, but of these we will speak later on.

ACUTE RHINITIS. (COLD IN THE HEAD.)

This condition is so common as to almost warrant an omission of the symptoms here, but we will mention them in passing. Frontal headache, general malaise, nose discharging a thin and irritating secretion which is responsible for the excoriation that you will observe on the upper lip and lower part of the nose. Breathing through the nose is impossible and much of the general indisposition is due to this fact; it prevents restful sleep. The throat feels parched and irritated and the tongue is usually heavily coated, due mostly to the mouth breathing.

A saline laxative will usually somewhat improve the general feeling, while internally a tablet containing the following, will to some extent control the local symptoms.

R Quinine Sulph. gr. ss.
 Ext. Belladonna lvs. gr. 1-8.
 Camphor Monobrom. gr. j.
 Caffeine Citrat. gr. ss.

M. Ft. tablet or capsule No. j.

Sig. One every two or three hours according to requirements.

For speedy relief, local treatment is undoubtedly greatly superior to internal medication, but both can be used to advantage.

On inspection the interior of the nose will be found to be congested and swollen and a simple method of relieving this congestion at once suggests itself—the use of cocaine. For this purpose a two per cent. or four per cent. solution is used. A pledget of cotton about the size of the nostril is saturated with the solution and placed within the nose and well up to, and pressing against the turbinates, and allowed to remain there for a period of ten minutes. When it is removed, the mucous membrane which ten minutes before was so red and angry looking, will now be seen to be dry, pale and shrunken and your patient will be able to breathe through the nose. The effects of cocaine will usually disappear in about thirty minutes, when the symptoms will again return. In order to prolong the effect of the cocaine, the interior of the nose should be sprayed with a four per cent. solution of antipyrine, which will maintain the cocaine effect for a period of five to eight hours, and will be followed by no reaction, but rather a decided improvement.

The temporary smarting which is produced by the four per cent. solution of antipyrine, will pass away very quickly, but antipyrine should never be used in as strong as four per cent. solution without the previous application of cocaine.

In the pharynx and larynx, much stronger solutions of antipyrine may be used without discomfort.

Never apply cocaine solution inside the nose with an atomizer, as in that case there is always danger of the patient swallowing an unknown quantity as almost invariably a portion of the fluid reaches the pharynx. Again, cocaine applied to the pharynx nearly always causes a feeling of dryness and the presence of a foreign body, and may even cause nausea and vomiting in extremely susceptible persons. Nitrate of silver has much the same effect and it may be said to be a general rule never to use cocaine or nitrate of silver in the pharynx, except in atrophic pharyngitis; in which the latter is of value.

A patient under treatment by the cocaine and antipyrine solutions, should be instructed to present himself in about six hours. Antipyrine may now be applied in a one per cent. or two per cent. solution and should be followed by a thorough spraying of a solution of aromatic antiseptics protected by an oily substance, as the following:

- R Menthol gr. x.
 Ol. Eucalyptol ℥ vj.
 Camphorated Alboline, 3 to 5 %... fl. ʒ iv.
M. Sig. Spray into nose three or four times a day.

For the excoriated spots inside the nose, as well as those on the external parts, calomel, thinly dusted over them, will hasten their repair as well as afford immediate relief.

This treatment will usually conquer an acute attack of this sort in twenty-four to thirty-six hours. Should the conditions demand it, the cocaine on cotton applications may be repeated once or twice before the spray is given. Should the circumstances of the patient be such as to render it impossible for him to call at the office for frequent repetitions of the treatment, an oil atomizer with sufficient solution may be given him with directions for use, together with the following powder which is to be used as a snuff sufficiently often to secure relief from excessive secretion and nasal stenosis.

- ℞ Menthol grs. ij.
 Magnesia Carbonate, light..... grs. x.
 Cocaine Muriate grs. viij.
 Saccharum Lact..... 5 iij.
- M. Make an impalpable powder.
- Sig. Use as a snuff as directed.

By the use of this preparation nasal stenosis may be relieved for an indefinite time, and therein lies the danger that it may lead to the formation of cocaine addiction. A moderate use of cocaine for a short time is never dangerous in this particular, but in order to prevent the patient from using the above powder after the acute symptoms have subsided, supply the powder yourself in small quantities only, and never tell the patient that he is using cocaine. In this manner you have complete control of the supply and can use proper precautions.

Chronic Nasal Catarrh.

For the purpose of considering this disease in as plain and easily understood a manner as possible, we will make the following divisions:

Simple Chronic Rhinitis, Hypertrophic Rhinitis, Atrophic Rhinitis.

SIMPLE CHRONIC RHINITIS.

This condition may be said to be present when there is a chronic inflammatory congestion of the nasal mucous membrane, with but few if any, structural changes. It is usually due to recurrent attacks of acute rhinitis which may be due to the habits of the individual or constitutional disease. Bathing in cold water, sleeping in rooms with too much ventilation, inhalation of dust or irritating substances are a frequent cause of this condition, as well as are diseases of the stomach and constipation.

The chief and only symptom of Simple Chronic Rhinitis is a profuse secretion of mucus, or sometimes when of long standing, muco-pus.

Examination will reveal a nasal membrane more or less congested, with here and there spots of yellowish or whitish mucus. The epithelium may be abraded in spots or sometimes extensively, due perhaps as much to the frequent attempts at relieving the nose of the accumulation of mucus as to the disease itself. In the vault of the pharynx and posterior nares where there is more glandular tissue, there will be more swelling than anteriorly, and the secretions will be found to be more tenacious.

Treatment:—The nose should be cleansed of the dry secretions by the use of an alkaline wash which may be used twice a day. The well known Dobell's solution may be used for this purpose or if the patient dislikes the carbolic acid odor, other alkaline and antiseptic agents may be employed. These are furnished by all pharmaceutical houses in tablet form. It should be borne in mind, however, that carbolic acid has not only an antiseptic action in the Dobell's solution, but that it is decidedly sedative in its action. On this account, unless the odor of the acid is decidedly obnoxious to the patient, this solution is to be preferred to many others which though more elegant, are vastly inferior to this old and valuable remedy. The formula of Dobell's solution, although familiar to most physicians, will here be given.

R Sodium Bicarb.
 Sodium Biboratāā ʒ j.
 Acid Carbolic ʒ ss.
 Glycerinefl. ʒ j.
 Aquaq. s. ad. Oij.

Mix.

The alkalies render the mucous secretions more fluid, the carbolic acid acts both as an antiseptic and a sedative, while the glycerine is added to increase the specific gravity

to nearer that of the normal secretions. No matter what the composition of a nasal douche may be, it will be irritating if the specific gravity is much more or much less than that of blood serum. It is well therefore to bear in mind that when tablets are used to form solutions for douching the nose, glycerine to the amount of an ounce to the quart should be added. Dobell's solution should not be used freshly prepared, but should be allowed to stand for a week or ten days and filtered. It is then that its bland and sedative action is most marked.

The best method of using solutions of this kind is by means of an atomizer. Direct the patient to point the nozzle slightly downward while using, as to point it upward as the majority will do unless properly instructed, will often cause severe pain in the ethmoidal sinuses. Direct the patient to insert the nozzle fully one-half inch and to point it toward the lower part of the ear. The head should be tilted slightly backward when using the atomizer. The soft rubber ear syringe may be used for the purpose of cleansing the nasal passages, but as these are usually found with a tip more than two inches long, it is well to cut them down to about an inch. By this method more solution is wasted than by the use of the atomizer and the results are not as satisfactory, but under certain circumstances their use is justified, notably among those whose nasal membrane is so sensitive as to cause excessive sneezing or nausea. The douche or spray should be used twice or three times daily.

Locally, the use of the Iodine-Glycerine solution should be applied two or three times a week. The application should be made to the floor of the nose and the naso-pharynx or to all the affected parts. The formula for this solution is :

℞ Iodine resub..... grs. x.
 Potassium Iodide..... grs. xxx.
 Glycerine fl. ℥ ij.

Mix.

In preparing this solution the Iodide of Potassium and the Iodine should be rubbed together in a mortar and the glycerine added slowly. After an application of this solution the Menthol-Alboline spray, formula of which is given under Acute Rhinitis may be used. It acts as a protective and prevents too rapid evaporation of the iodine.

The discharge of mucus is usually thinner and more watery after an application of the Iodine-Glycerine solution and the patient should be instructed not to blow the mucus out through the nose, but to draw it back and expectorate it. Under this treatment these cases usually recover in from six to eight weeks.

HYPERTROPHIC RHINITIS.

(CHRONIC HYPERTROPHIC CATARRH.)

A certain number of cases of simple chronic rhinitis are always neglected until they have developed into Hypertrophic Rhinitis, and will then for the first time be brought to the notice of the physician. Here, on examination, a different clinical picture reveals itself. Structural changes in various degrees of development will now be noticed, a proliferation of all the normal mucous membrane making it of increased size and therefore called hypertrophic. The glandular structures in the posterior nares and turbinated bodies are also enlarged, subject to the same influences as the membranes more anteriorly. The secretions are now thick and tenacious, which with the enlarged membrane and swollen turbinates completely occlude the air passages, causing difficult breathing, giving the voice a nasal twang and causes the patient to become concerned about himself.

The parts most frequently involved are the inferior turbinated bodies, which are more or less covered with erectile tissue which is easily engorged and consequently increased in size. For the reduction of this engorgement the galvano cautery is frequently recommended and used, but it must be said, often to the decided disadvantage and

discomfort of the patient, and not permanently removing the disease. In chromic acid we have a remedy that in many cases will prove itself superior to the cautery, and one that is not attended with its dangers. It has also the advantage of being more easily within the reach of the general practitioner, for whose benefit these lines are written. For the purpose of removing the hypertrophy of the anterior portion of the inferior turbinates, the following technique should be followed: The patient should receive local treatment for the active inflammatory symptoms, similar to that advised for simple chronic rhinitis, and after these have subsided the procedure will be thus: The side of the nose upon which the operation is to be performed should be cocaineized with a pledget of cotton saturated with a 4% solution of cocaine. This pledget should be brought into close contact with the hypertrophied tissue which is to be removed, and allowed to remain fully twenty minutes. At the end of this time the cotton will be removed and the membrane will be found to be bleached and lying closely in contact with the bone. A few fibres of cotton should now be wrapped about the end of a probe and dipped first into the cocaine solution and afterward into powdered cocaine. This probe is then pressed rather firmly along the line of the proposed application to be made with chromic acid. After a few minutes of this pressure and rubbing along the line of the proposed application, the membranes are ready for the action of the chromic acid, and if properly cocaineized, little or no pain should be felt. There are several methods by which chromic acid may be applied. Several chromic acid applicators are in the market, the best of which are probably the Bosworth and Sajou. Instrument dealers can furnish these and their mode of action is evident on inspection. For all practical purposes the cotton on probe method is all that can be desired. A few fibers of cotton should be wrapped closely about the end of a probe and slightly moistened. A small quantity of coarsely pow-

dered chromic acid should now be placed on a piece of glass, a glass slide answers very well, and the cotton tipped end of the probe turned in it until considerable of the acid is entangled in the cotton. The area to be cauterized is then carefully dried, to prevent the acid from dissolving and spreading to adjacent areas. The end of the probe with the acid, firmly pressed against the parts, is then drawn back and forth against the parts until the increased resistance indicates that the tissues have been cauterized through to the bone. The probe is now withdrawn and a few moments are allowed for the acid to complete its work. The patient now inclines his head forward, over a basin, and the nose is sprayed with Dobell's solution to neutralize any excess of acid which may remain in the nose. The spraying should be so carefully conducted that all of the fluid flows forward into the basin, and not backward into the pharynx, as chromic acid is somewhat poisonous. Should a portion of the fluid pass into the pharynx, carrying acid with it, free douching should be resorted to and the patient instructed to refrain from swallowing. This operation is usually followed by considerable swelling of the operated area and some degree of nasal stenosis will be present on this account and the formation of the scabs. The scab usually comes away within a week and smaller ones form; sometimes once, sometimes twice. When they have disappeared, if there is no further hypertrophy, the nose remains open and unobstructed. The after treatment consists of keeping the parts clean with Dobell's solution, and if pain or stenosis should require it the snuff before mentioned may be employed.

Hypertrophies of the posterior portion of the inferior turbinated bodies are best removed by the use of the snare, either the Jarvis or Bosworth. In this operation cocaine must not be used, as it would shrink the part to be grasped by the wire loop so much as to make it impossible. By a little delicate manipulation the operator will be able to grasp in the loop as much of the hypertrophied tissue as is

desired to be removed, and by a rapid finger pressure will be able to retain it until the set screw can be set upon it. By a few turns of the screw the wire loop is tightened until there is no danger of slipping. After a few minutes rest the screw is gradually turned, usually about one-half turn at a time. Allow a rest of a few minutes after each half turn and continue until the hypertrophy is freed from its attachments. The attaching of the loop is really the only painful part of the operation and as soon as it is well tightened there is but trifling pain. There is usually but trifling hemorrhage, but the patient should not be allowed to leave the office for half an hour so as to be conveniently near should a severe hemorrhage occur.

For the purpose of checking hemorrhage, should it occur, pressure should be applied to the bleeding vessels. A probe should be wrapped with sufficient absorbent cotton to form a wedge shaped plug, two inches long and sufficiently large to fill the interior of the nose. Saturate the plug dripping wet with pure Hydrozone and thrust it along the floor of the nose until the pharynx is reached. Place the finger on the cotton in the nose and withdraw the probe, allowing the finger to remain on the cotton, under slight pressure, until the ebullition of the gas which forms, has subsided. Support this plug with another so that the entire space is thoroughly filled with the cotton. By the addition of the peroxide to the clot in the nose the latter is hardened and increased in size which assists the cotton in forming pressure. It is however not the cotton nor the peroxide that suppresses the hemorrhage, but the clot which forms firmly about the cotton and extends into the bleeding vessel. This plug may be carefully removed in from six to twelve hours. In cases where the hemorrhage was unusually severe several minutes should elapse between each slight movement of the plug, and if a drop of blood appears, the cotton already without the nose should be clipped off and a fresh Hydrozone plug inserted against the stump of the old one.

Never use Monsell's solution or Monsell's salt inside the nose. It is frequently recommended in medical journals, but is painful and very irritating. With the Hydrozone used as herein described, any nasal hemorrhage can be checked, even though the plugging may have to be repeated several times. As before said, severe hemorrhage is rare, but as it is the unexpected occurrences which cause the trouble it is best to have a remedy at hand. The after treatment is the same as after chronic acid cauterization—cleanliness.

ATROPHIC RHINITIS.

Atrophic catarrh, sometimes called Dry Catarrh, is characterized by the formation of dry scabs and crusts, or a thin watery discharge when it occurs in scrofulous persons. These scabs, crusts and discharges usually emit a fetid and offensive odor. In scrofulous cases the disease is termed ozæna. This form of catarrh is usually developed by neglecting to treat hypertrophic catarrh, and is essentially a death of the tissues, the tissues being crowded to death by the engorgement and enlargement present in the latter disease. There is but little possibility of confounding this stage of the disease with any other. The nose is now not pressed for space. There is no swelling, no engorgement, no hypertrophy. There is no interference with the breathing except that which is caused by the scabs or crusts present, the posterior wall of the pharynx will be seen to be dry and glistening, the sense of smell is interfered with and sometimes destroyed, there is pain in the frontal sinuses, the patient is irritable and very sensitive to atmospheric changes. The odor escaping from the nostrils of persons affected with this disease is sometimes beyond description and must be imagined, rather than an attempt made to describe it. Our words of encouragement which we were able to express to patients suffering under the forms of catarrh previously detailed, must now cease, for unfortu-

nately the cure of this disease is rarely fully accomplished. The fetor of the breath and the foul smelling discharges can usually be easily and quickly corrected, and if the treatment is persisted in, much good will be accomplished, and in some cases an apparent cure will result. The indications for treatment are two-fold; cleanliness and stimulation. The former may be secured by the use of the antiseptic wash before mentioned, Dobell's solution, although occasionally it will be necessary to first remove the crusts and scabs by means of the forceps. If the removal of these formations is attended with much difficulty, a preliminary spraying with Hydrozone, 50 %, will be of assistance. As the pharynx is most frequently involved when this disease exists to any extent, the cleansing should be thoroughly done and extended into this part of the air passages.

For the purpose of reaching the pharynx a post nasal syringe is best adapted, and after introducing the nozzle behind the velum palati, the stream should be thrown into the vault of the pharynx with considerable force. For the purpose of stimulating the atrophied mucous membranes, and increasing their vascularity, increasing the secretions and promoting new growth, various remedies have been brought forward, the most prominent of which are Nitrate of Silver, Galangal Root, powdered, Salicylic Acid and Potassium Bromide. In my experience the first mentioned is alone worthy of recognition. It may be employed either in solution or by means of the powder blower. Any good instrument will answer the purpose, and yet for general convenience and cleanliness the DeVilbiss, with several extra reservoirs, is perhaps the one to be preferred. The tube and reservoirs are of metal and can thus be easily cleansed. If applied in solution the applications are made by means of the cotton tipped probe, in sufficient strength to produce momentary smarting. The strength may vary from five to thirty grains of the Silver Nitrate to the fluid ounce of distilled water.

For use in the powder blower the Nitrate of Silver should be used in strength sufficient to produce the same effect as in solution, momentary smarting. As a diluting agent starch may be used and the strength may vary from ten to thirty grains to the ounce of starch. Stearate of Zinc is a very desirable vehicle for the body of a snuff, as it is very light and extremely tenacious. As it is lighter and more bulky than starch, two drachms may be used instead of one ounce of starch. These stronger applications should be made by the physician twice or three times each week, while for the home use of the patient he should be given a preparation containing about three grains of the Nitrate of Silver to the ounce of Starch or two drachms Stearate of Zinc. Directions should be given to use it as a snuff at bedtime, each night. An important part of the treatment of Atrophic Rhinitis is the wearing of cotton plugs or cylinders in the nose, so placed inside the nose as to take the place, to a large extent, of the atrophied turbinated bodies. Their presence excites the atrophied mucous membrane to renewed action, so that the dried secretions are washed away in the increased discharges, and the fetid odor corrected. The air passing through and around these cylinders becomes warmed, moist and free from dust and enters the lungs as if it had passed through a healthy nose. If the pharynx presents an atrophied condition these cylinders of absorbent cotton should be sufficiently long to extend the entire length of the nasal floor and project somewhat from the posterior nares. These cylinders are easily made by loosely wrapping absorbent cotton about a smooth probe until it has assumed the desired shape and bulk, when it may be slipped off the probe and introduced into the nose, or it may be introduced with the probe and slipped off afterward. The patient may be taught how to make these cylinders and instructed to introduce a fresh one as soon as the old one is removed by the use of the handkerchief. As the secretions are absorbed by the cotton the breathing becomes more dif-

ficult, and when it seems filled a fresh one should be inserted. Note that these cylinders are to be loosely wrapped, so as to allow free breathing through them. If worn constantly the improvement will be immediately noticed. When the pharynx is involved, in addition to allowing the cotton cylinders to extend slightly beyond the posterior nares, applications of Nitrate of Silver in solution, grs. v to xv to the ounce of distilled water, should be made to the atrophied mucous membrane, three times a week, to stimulate the atrophied glands to increased secretion and induce renewed growth in the atrophied structures.

Internally, to increase secretions and lessen reflex irritability, the following mixture may be used to advantage:

℞ Potassium Bromide ʒ iv.
 Potassium Iodide ʒ iss.
 Ext. Glycyrrhiza..... ʒ iss.
 Aqua q. s. ad. fl. ʒ iv.

M. Sig. Teaspoonful before each meal.

Additional Formulae.

The formula given for Dobell's solution is a somewhat modified form of the official preparation, which is as follows:

℞ Sodium Bicarbonate.
 Sodium Biborate.....āā ʒ ij.
 Acid Carbolic..... gtt. xxiv.
 Aquaq. s. ad. Oj.

Mix.

A great many modifications of this formula frequently appear in medical periodicals, all of which practically answer the purpose for which they are intended, although the one given under Simple Chronic Rhinitis is perhaps the most popular and has the advantage of having a specific gravity practically the same as blood serum.

Instead of using cocaine in the form of a snuff it is permissible to combine it in the form of an ointment. It is useful in Simple Chronic Rhinitis and in Hypertrophic Rhinitis, but should be used with caution; not dispensing more than one-fourth or one-half ounce at a time and never allowing the patient to know that cocaine is being used. It should not be continued any longer than the time required to treat the patient as heretofore outlined, and it should only be considered as an adjunct, as a palliative, and not as a curative agent. The following formula will be found pleasant and effective in allaying irritability and temporarily reducing the engorgement and hypertrophy:

R Cocaine Muriate..... gr. xij.
 Thymol gr. viij.
 Menthol gr. xij.
 White Petrolatum..... $\frac{3}{4}$ iv.

Mix.

Sig. Apply a piece the size of a pea, well up into the nostril. Repeat once or twice daily.

In the treatment of Simple Chronic Rhinitis, the strength of the Iodine, Iodide of Potassium and Glycerine mixture can be varied according to the requirements of the patient. The formula given is usually a good one to begin with and as soon as the patient becomes accustomed to this strength and it no longer causes smarting when applied, the strength of the Iodine and Iodide of Potassium may be increased to as much as thirty grains of the former and ninety grains of the latter to the ounce of glycerine.

The following formula may be used alternately with the Iodine-Iodide of Potassium solution, especially when the lower portion of the pharynx is involved:

R Fl. Ext. Hydrastis Canaden..... fl. $\frac{3}{4}$ iv.
 Glycerineq. s. ad. fl. $\frac{3}{4}$ ij.

Mix.

After the local treatment by the physician is discontinued, the patient should be instructed to continue the use of the atomizer with the alkaline and antiseptic solution for a month or more. Thorough cleansing of the nose and pharynx, twice a day should be insisted on, and the following ointment used afterward. This ointment is perfectly harmless, even if continued indefinitely:

℞ Menthol	gr. j.
Thymol	gr. iiij.
Bismuth Sub Carbonate.....	gr. xv.
Oil Gaultheria.....	gtt. ij.
White Petrolatum.....	℥ j.

Mix thoroughly.

Apply to nostril after using atomizer.

A STIMULATING POWDER.

℞ Acid Boracic.....	℥ iv.
Sulphur lact.....	℥ ij.
Fl. Ext. Calendula	gtt. xxx.

Mix. Triturate well in a mortar and spread on paper and allow it to dry. Triturate again and bottle. Apply with powder blower.

In preparing solutions of Nitrate of Silver always use distilled water, as the salts of calcium, potassium, etc., found in water combine with it and render it less efficacious.

If the treatment of these commoner affections of the upper air passages will be faithfully followed, any practitioner can confidently expect to realize results fully as satisfactory as those obtained by the specialist, bearing in mind always that the specialist is nothing more than a physician who has acquired a thorough knowledge of his subject, and what is perhaps more to the point, has the courage to put his knowledge to a practical application.

Other Nasal Abnormalities.

The physician who has become thoroughly acquainted with the treatment of the Catarrhal conditions of the air passages, has but a short step to make to be able to handle successfully some of the minor surgical conditions that are frequently met with in a practice devoted largely to the treatment of diseases of the nose and throat. These will occupy our attention briefly.

NASAL POLYPI.

A very frequent cause of nasal stenosis and difficult breathing is nasal polypi, of which there are three varieties: mucous, fibrous and cystic. The most common varieties are the mucous and the fibrous. The cystic, which is nothing more than a thin bladder like sac, filled with a thin watery substance, is extremely rare. Polypi are easily recognized. They are usually somewhat paler in color than the mucous membrane, and are pedunculated. The mucous polypus is soft, gelatinous and increases in size in damp weather. The fibrous polypus is harder, more firm and on section shows a more solid structure than the mucous. They are a frequent cause of reflex disturbances, the most notable of which is asthma. Many asthmatic cases recover entirely after the removal of nasal polypi. These growths are easily removed, so easily in fact that it is surprising to learn of the number of physicians who would not hesitate to amputate a limb or curette a uterus, and yet refer cases of nasal polypi to the nose and throat specialist.

A polypus is devoid of any sensibility, but its attachment is often extremely sensitive, and therefore their removal should not be attempted without the use of cocaine. The instrument used is the wire snare, of which several styles are in the market, and which have previously been referred to in this chapter. If the polypus is small it should

be encircled and slightly compressed by the wire before the cocaine is applied, as if this is not done, the polypus will often disappear under the influence of the cocaine. Their removal is accomplished in the same manner as detailed under the removal of the hypertrophied tissue from the turbinates. If the parts are not thoroughly cocainized there will usually be considerable sneezing on the part of the patient, greatly to the annoyance of the operator and possible harm to the tissues, especially after the snare has been partly tightened. The removal of polypi is usually attended with but little loss of blood and under proper anesthesia is not painful. After these growths have been removed and the nose cleared, the stumps should be dusted with powdered pepsin, caroid or papoid, that the tissue devitalized by the pressure of the snare may be digested and the surface freed from dead or partly dead fragments. It has been claimed that applications of strong solutions of pepsin or the other digestants mentioned have the power to digest polypi, but this statement is not borne out by experience. Polypi are usually recurrent but repeated removal and proper attention to the stumps will after a time render the patient free from these growths. After the removal of them, other conditions if present should be treated as indicated. The removal of polypi is often only the first step in the treatment of the various forms in which catarrh appears.

FIBROMA.

Fibrous tumors are sometimes met with in the nasopharyngeal region, and when found should be promptly removed. Fibromata, as indicated by their name, are tough fibrous growths with considerable vascularity.

Their removal is best accomplished by the galvanocautery snare, with its wire at a red heat. The operation should not be attempted with the ordinary snare as the best steel wire usually breaks, and the hemorrhage is quite profuse. The hot wire acts as a hemostat and thus adds another feature to its value. Cocainize thoroughly.

Instruments.

In the fore part of this chapter we referred to a few instruments that are absolutely necessary for the purpose of making even a most superficial examination of the nose or throat. These and others will now be more fully considered.

INSTRUMENTS FOR MAKING EXAMINATIONS.

THE LAMP. When the office is supplied with gas, the adjustable Gas Bracket with Argand Burner is a very desirable light, or the Boekel-Mackenzie Laryngoscope with Mirror Bar and Mirror may be used. With the former the head mirror is used while with the latter the mirror is attached to the bar and lamp, thus leaving the head of the operator free. The latter instrument can also be obtained for use on an oil lamp for which purpose the lamp known as the "Student," is best adapted.

HEAD MIRROR. While this instrument is not used in connection with the Laryngoscope previously mentioned, every physician doing work along this line should be supplied with one. Examinations may often be made by sun light and when this is possible it is always most satisfactory. A number of different styles of head mirrors and bands are in the market, all of which are practically the same. Electric lights with mirror attached are in the market, and are a convenient article. See portable electric light outfit in section on Rectal Diseases.

NASAL SPECULA. The most desirable instrument for dilating the nostril is one that is self-retaining, thus leaving both hands of the operator free. Several of this kind are in the market, the best of which are probably Potter's, Bosworth's, Frankel's, Goodwillie's, or Folsom's, all of which are similarly constructed and have their advocates.

Several different Specula should be bought to meet the requirements of different cases.

Tongue Depressors are found in various shapes and styles, all of which practically answer the purpose. The ordinary fenestrated instrument which folds and is thus easily tucked away and carried is all that can be desired.

Laryngeal Mirrors are made in different sizes and several should be purchased.

OPERATING INSTRUMENTS.

SNARES. The general principle of all snares is alike. Some are more elaborate than others but have no practical advantage over the simpler forms. As an all-around instrument the Bosworth snare is a perfect success. The Hooper, Jarvis and the Wright may also be mentioned. The latter is a more complicated affair, and instead of a nut for tightening the snare, it has a small lever, which on being pressed, slips a serrated attachment over a retaining point, one notch at a time. It also can be folded.

GALVANO-CAUTERY. Any instrument house can furnish these instruments in scores of different designs and styles, depending largely on the amount which the physician wishes to invest. The Galvano-Cautery, while as before said is often used injudiciously, is nevertheless a desirable instrument, and in proper hands will accomplish much good. A follicular pharyngitis will almost invariably follow the free use of the cautery, and treatment should be instituted at the first symptom.

A Compressed Air Apparatus may be added for office work, also the necessary Nebulizers, Vaporizers and Atomizers. A liberal supply of applicators, probes, retractors, post-nasal syringes, powder blowers, etc., etc., should be kept on hand.

Other instruments will be required from time to time as the physician proceeds with his work, depending entirely on the particular cases he may be called upon to treat.

DISEASES OF WOMEN.

Non-Surgical Treatment.

The treatment of diseases of women will forever constitute an important and considerable portion of the practice of the general practitioner, and if special attention is given to this class of cases, the additional financial returns that will accrue will amply repay any physician for the extra time and thought devoted to them.

In considering this subject it should be understood that the necessary surgical means, often so successfully resorted to in cases in which surgery is undoubtedly indicated, are not under-estimated or discouraged, but the fact remains that after one or two successful operations on the female generative organs have taken place in any locality, there will be the usual rush for operations and it will continue uninterruptedly until one or more sudden deaths effectually quell the onslaught. Under such circumstances the physician is apt to be carried on with the swell of the tide and begins to think that after all, surgery is the only remedy. The gynecologist is never consulted in these cases until after the patient has been ineffectually treated by one or more general practitioners, and it is for the latter class of physicians to decide whether the gynecologist is to be consulted or not. On the treatment given by the family physician, or some other physician in general practice, depends largely the future course of the woman afflicted with diseases peculiar to her sex, and it is therefore important that sufficient attention should be given the subject to at least treat them with intelligence and the best means known to the profes-

sion. When the indication for surgery is unmistakable, no time should be lost in obtaining the necessary operation, but when the indication for this is not clear or entirely absent, much good can be accomplished by other remedial means.

The conditions met with in an ordinary practice of this kind are Dysmenorrhoea, Leucorrhoea, Vaginitis, Pruritus, Prolapse, Ulcerations, Irritability of the Bladder, Backache, Bearing-down feeling, Ovaritis and Pain.

Examination of women in whom this condition of affairs exists will almost invariably reveal enlargement of the womb, either hard, or soft and flabby, thickening of the mucous membranes, inflamed and engorged when in the earlier stages and hardened and tough in the latter stages, and thickening of the peritoneal coverings and adhesions, the latter being at times noticeable through the vaginal walls and demonstrable in surgical cases.

Similar conditions occurring in other parts of the body would at once call for a remedy that strangely is but seldom seen recommended in the treatment of female diseases. The remedy is Iodine. This drug is the best at our command to increase tissue waste and absorption of all hypertrophied or indurated mucous membranes and combined with other remedies that may be indicated, the results are often surprising. The following can confidently be relied on and is especially indicated where there is leucorrhoea, back-ache, dysmenorrhoea or amenorrhoea, irritability of the bladder and pain.

℞ Iodine, resublimed..... gr. xl.
 Potassium Iodide..... gr. lxxx.
 Fl. Ext. Nux Vomica.
 Fl. Ext. Belladonna.
 Tr. Cantharides..... āā fl. ʒ ij.
 Aqua q. s. ad. fl. ʒ ij.

Mix. Dissolve the Iodine in a solution of the Iodide of Potassium in the water, and add to the other ingredients.

Let stand a week or ten days, filter, and it is ready for use. Dose, ten to fifteen drops, in water, three times a day, preferably before meals.

When the leucorrhoea, back-ache and irritability of the bladder disappear the treatment should be changed and only the iodine and potassium iodide need be given. Use the same quantities as above given, in two ounces of water, dose being the same. Continue this until the enlargement and thickening of the membranes also disappears or reaches the limit of improvement. When amenorrhoea is the principal symptom, the Iodine and Iodide of Potassium mixture need only be given fifteen days prior to the time for menstruation. It will prove itself an efficient emmenagogue whenever a remedy of this sort is indicated. Instead of adding all water, syrup or simple elixir may be added to improve the taste. By adding vehicles of this sort the above formula may be increased to eight ounces, when the dose would be one drachm.

If the patient requires a sedative, Hyoscyamus or Viburnum, or both may be added to the above, or Tr. Gentian Comp., should the appetite need stimulation. In order to obtain the best results it will be necessary to continue this treatment for from six months to a year, according to the gravity of the case. Iodine promotes absorption as is well known, but it is essentially a slow process. Under this treatment the entire system is benefited, especially when the menstrual flow is retarded as it relieves the system of the effete material which is allowed to accumulate.

Iodine stimulates to glandular activity and consequently the ovaries are influenced by it. The glands in the mucosa of the uterus as well as the numerous pelvic glands are also stimulated to their normal action.

Iodine is usually better borne than the large doses of Iodide of Potassium which would be necessary to obtain the required amount of Iodine, and does not retard the digestion as does the Iodide, and in fact in many cases the appe-

tite is materially increased. Where small fibroids of the uterus are known to exist, Iodine administered in connection with Ergot will sometimes cause them to be passed with the menstrual flow. The Ergot should not be combined with the Iodine, but should be given at an interval of an hour or two after the latter. The dose depends upon the preparation employed, whether fluid extract, solid extract or ergotin, and the physician may be guided in this matter by the customary dosage of the preparation employed.

In cases of prolapse, ulceration, erosion of the cervix, leucorrhoea, pruritus or small polypi the following wafer will be found an exceptionally good remedy. They do not cause any burning or stinging when introduced into the vagina and are decidedly antiphlogistic. In cases where there is much ulceration with oedema or polypi the discharges will be found to contain more or less shreds of mucous membrane or the polypi, and the patient should be informed of this fact in order that she may not be frightened when she notices it. The formula is as follows:

℞ Powd. Zinc Sulphate..... gr. xxx.
 Powd. Jequerity Seed..... 3 iij.
 Powd. Acacia 3 j.
 Powd. Acid Boracic..... 3 x.
 Aqua q. s.

Mix. Divide into 60 wafers, or compress into 60 flat tablets.

Rub the powdered ingredients together in a mortar until intimately mixed and add sufficient water to make a mass of about the same consistency as a pill mass. Roll the mass on a tile and cut into sixty pieces. Flatten each piece into the shape of a coin and set aside to dry. Wafers made by this process harden more solidly than when made by compression of the dry powder, and therefore will not dissolve as quickly; a desirable point.

Directions. Direct the patient to take a douche of hot

water and after an interval of half an hour, insert a wafer into the vagina, well up against the womb. Allow it to remain three days, then take another douche. Wait twenty-four hours and repeat the process and continue thus throughout the time required, as long as relief and improvement is obtained.

It should not be inferred that this treatment will cure all cases of prolapse of the uterus, but by the tonic and astringent action of this remedy the vaginal walls will become less lax and shrunken and will thus afford a better support for the womb. The sole cause for prolapse is often the previously mentioned engorgement and enlargement, which being relieved will allow the womb to assume its normal shape and position.

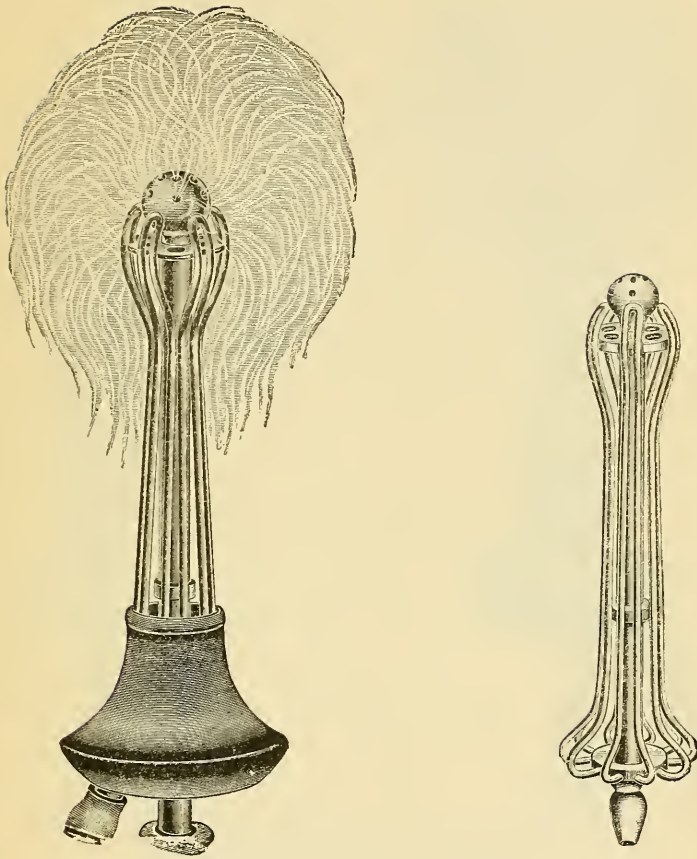
In simple leucorrhoea, vaginitis or pruritus the following astringent powder will be found of the highest value :

R Powd. Alum.
 Powd. Boracic Acid.
 Powd. Sodium Biborate.....āā ʒ xvj.
 Acid Carbolic fl. ʒ iiss.
 Oil Gaultheria fl. ʒ ss.

Mix.

Mix the Carbolic acid with the Oil and add the other ingredients. If there is much fetor of the discharge Potassium Permanganate may be added in the proportion of gr. xv to gr. xxx to the pound.

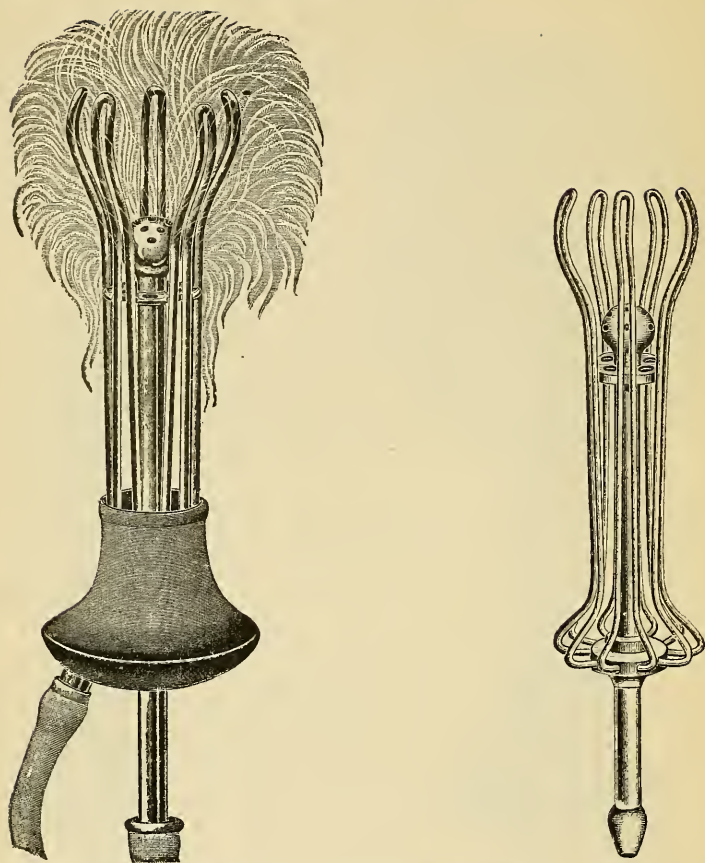
Sig. One to two heaping teaspoonfuls to a pint of hot water. Use as a douche once or twice daily. For the purpose of douching the ordinary small vaginal tubes furnished with syringes are practically worthless. Use a fountain syringe of at least one quart capacity, with a dilating nozzle as shown in the following illustrations.



THE "NIAGARA SPRAY" DILATING NOZZLE. (CLOSED).

With and without return flow.

By means of this instrument the vagina is thoroughly dilated, folds of the mucous membrane which enclose and retain secretions are opened and the antiseptic cleansing douche distributed to all parts of the vagina. An additional advantage is gained by not having the openings in the tube in contact with the vagina. By means of the dilators the



THE "NIAGARA SPRAY" DILATING NOZZLE. (OPEN).
With and without return flow.

vaginal membrane is at all times from three-fourths to one inch distant from the outlet of the tube, thus allowing a forcible contact of the douche against the vagina. Douches given with the ordinary small tube cannot compare in effectiveness with the thorough cleansing and medication possible with this spray.

By means of the return flow attachment, a thorough douching can be given in bed, or without soiling the clothing.

Pruritus.

The obstinacy of this symptom warrants a somewhat more extended consideration. When it is present the urine should always be carefully examined, as it is known to be a frequent symptom of Diabetes.

If no constitutional cause can be ascertained the following remedies will in many instances give relief. The formulæ given for Pruritus Ani may also be employed.

Applications of tar water to which one per cent. of chloral hydrate and acetic acid have been added should be used as a lotion to the vulva, morning and evening. Also the following ointment:

℞ Menthol gr. xlv.
 Olive Oil gtt. xv.
 Lanoline ʒ iss.

Mix. Apply after the lotion above mentioned.

Or ℞ Potassium Bromide.
 Acid Salicylic..... āā gr. xv.
 Glycerole of Starch..... ʒ v.
 Calomel gr. vj.
 Powd. Ext. Belladonna..... gr. iiij.

Mix.

Or ℞ Acid Carbolic ʒ j.
 Morphia Sulphate gr. x.
 Acid Boracic ʒ ij.
 Vaseline ʒ iiss.

Mix.

Or ℞ Cod Liver Oil.
 Oil of Tar.
 Lanoline āā ʒ ijss.
 Silver Nitrate gr. vj.

Mix.

Electricity, both Faradic and Galvanic current, is sometimes employed with good results.

TAPE WORMS.

In man the normal habitat of the parasite of the genus *Tenia*, commonly known as the Tape Worm, is in the small intestine, where it flourishes under all normal or abnormal physical conditions, its spontaneous expulsion rarely if ever occurring. The symptoms of a person harboring one of these unwelcome guests are sometimes serious and at others less troublesome. There may be any of the following symptoms: loss or increase of appetite, melancholia, nausea, vomiting, colic, insomnia, headaches from intestinal irritation, etc. The only certain indication of the existence of the worm is the passage with the stool of the links or sections of the worm, which appear and are often described by patients as pieces of gristle.

Tape Worm Specialists.

The medical profession is largely responsible for the existence and success of the gentry known as "Tape Worm Specialists." This class of practitioners, who are often irregulars and non-graduates, are frequently permanently located in the large cities, or are of the itinerant order and travel from one section to the other.

It is a great mistake on the part of the general profession to ignore the symptoms produced by tape worms, or to refuse to attempt to treat persons thought to have one or more of them, for the reason that itinerants and charlatans deal with these parasites. If the profession would devote some attention to these cases and treat them intelligently, the presence of the "Tape Worm Specialist" would become exceedingly rare.

THE REMEDY.

When physicians desire to administer medicines for the removal of tape worms they are often at a loss to know what to prescribe, use inferior drugs, and often fail in their efforts. The following remedy was obtained from a physician who used it with a great deal of success, claiming that when good drugs are used the remedy was practically a specific. In my own practice I have had occasion to use the remedy and I feel safe in asserting that seventy-five per cent. of all cases will be permanently relieved, passing the worm entire, while others will receive temporary relief, and can be treated again in about ninety days. Treatment should not be repeated earlier than ninety days after a treatment has been given, or until sections of the worm pass in the feces. It requires about this period for a worm to become full grown. Should sections pass from a patient after a worm or part of one has been removed, it is an indication that a second worm is present, and treatment may be given within a week or two. The formula is

R	Oleoresin Male Fern, (Squibb)	5 iij.
	Fl. Ext. Kamala	5 ij.
	Chloroform	gtt. x.
	Croton Oil	gtt. iij.
	Castor Oil	q. s. ad. 5 ij.

Mix.

This quantity is to be divided into two portions of one ounce each and taken as directed in the following paragraph.

Before administering the remedy a saline aperient should be taken. Saline, because these cause a copious secretion of fluids from the entire intestinal tract. This effusion taking place from the surface where the head of the worm rests, protected by dense mucus, loosens the mucus and washes it away, thus allowing the remedy to come into contact with the head. Otherwise it would pass over it without direct contact and would not cause the head to pass.

The saline should be given about thirty-six hours before the remedy is to be given, and in the meantime the patient should eat as little as possible. The less eaten the better. One dose of the remedy should be given at about 7 A. M., and the second, two hours later. The worm will come with the cathartic action of the remedy. When the worm is known to be passing the patient must sit over a vessel containing warm water, about the normal temperature of the body, the anus being in the water. The worm will pass more easily by this method as the change in temperature, when the vessel is not used causes the worm to make an effort to remain inside. When the worm is dead this is of course not necessary, but they are not always dead when passed.

TANNATE OF PELLETIERINE is a remedy that is largely used and strongly recommended for the purpose of removing tape worms. Pelletierine is the active principle of Pomegranate. The following formula will prove effective:

R Pelletierine Tannate gr. iv.
 Oleoresin Male Fern..... ℥ xxx.
 Chloroform ℥ v.
 Syr. Acacia ʒ j.

Mix. After a saline and fasting as before directed, take the above at one dose, preferably in the morning. A half glass of milk should be taken immediately afterward. After two hours take a brisk cathartic, preferably castor oil.

The following formula combines three of the most prominent remedies for the removal of tape worms and deserves mention.

R Ethereal Ext. Pomegranate.
 Ethereal Ext. Male Fern..... āā gr. viij.
 Kousoo Flowers, Powd..... ʒ v.
 Honey ʒ v.

Mix. Divide this quantity into three doses and take

one dose every fifteen minutes until three are taken. The usual fasting rules are to be observed. Two hours after the last dose, follow with two ounces or more of castor oil.

SALICYLIC ACID has been highly spoken of as a remedy for the removal of tape worms, although it is not generally used by the most successful practitioners in this line. This may be due to its not being generally known. Dr. Carnet, of Connecticut, claims to obtain excellent results from its use. He allows the patient to eat as usual and gives eight grains of salicylic acid every hour until forty grains are taken. After the last dose a laxative dose of castor oil is given. The worms are said to pass alive and are usually passed entirely. So common and cheap a remedy deserves a trial.

ALOPECIA.

Baldness may be considered physiological when it occurs in persons well advanced in years, but when young or middle-aged persons are thus affected it may well be termed an abnormal condition.

The etiology of baldness is not by any means clear. Trophic disturbances of the nervous supply of the occipito-frontalis muscle have been declared to be the cause, but this is so vague that it is equivalent to acknowledging ignorance in the matter. The exclusion of light and air due to continual wearing of the hat has been offered as a possible cause, but the large majority of policemen, coachmen and men employed out-doors and who wear head coverings as many hours in twenty-four as any one, have an average supply of hair.

A popular belief is that mental labor, continual anxiety or occupations requiring acuteness of vision have some influence in connection with the loss of hair, but a large percentage of teachers, musicians, bankers and literary workers have no use for hair restorers. The wearing of the ordinary stiff hat, which fits the head closely and possibly interferes with the proper blood supply of the scalp is perhaps a factor in those who become bald, or possibly in those who have a predisposition to baldness through heredity or otherwise, but it can scarcely be termed a cause *per se*. The strongest argument in its favor is that so very few women become bald. Unless lost through fever or some systemic disease, there is scarcely a woman under fifty years of age, who has not the usual quantity of hair. The parasite theory is perhaps the one which finds most favor, probably for the reason that it offers an explanation which cannot well be disproved.

Taking it as a premise that when baldness begins under forty, or particularly when persons twenty or thirty years of age become affected, it is abnormal, the conclusion must be that proper treatment will frequently benefit; either in arresting the loss or restoring the hair. Prof. Lassar has had good success with the treatment which follows, as have also others who have used it. Dr. Bernheim, of this city, a former student of Prof. Lassar's, has obtained beneficial results in about a dozen cases. The treatment must be patiently persisted in, diligently applied and results not expected too early.

PROF. LASSAR'S TREATMENT.

First, the scalp should be shampooed every day for eight weeks, and after that, every other day, or three times a week, for eight weeks more, with tar soap, made by adding 40 parts of birchwood, or preferably beechwood tar, to 60 parts of soap mixture. Ordinary tar soap is too weak to be effective. The shampooing must be done thoroughly, for not less than ten minutes, after which the soap should be washed off first with warm water, gradually coming to cool or even cold water. The hair and scalp should then be dried by patting it with a cloth or tissue paper. The scalp should next be rubbed with the following:

℞ Mercuric Chloride, Corros..... gr. xv.
 Glycerine,
 Cologne Spts.....āā fl. $\frac{3}{4}$ iij.
 Water fl. $\frac{3}{4}$ x.

Mix.

Apply to scalp with soft woolen cloth and rub for five minutes. After this rub the skin dry for another five minutes with a solution of

℞ Beta Naphthol gr. xv.
 Absolute Alcohol fl. $\frac{3}{4}$ vij.

Mix.

After this, use as freely as possible, a hair oil as follows :

R	Acid Salicylic	gr. xxx.
	Tr. Benzoin	℥ j.
	Neatsfoot Oil	fl. ℥ iijss.

Mix.

Sig. Rub generous portions of the oil into the scalp for five minutes.

The idea of this procedure is to remove, by means of the soap, all dirt, dust, etc. The mercuric solution is readily taken up by the hair follicles and seems to have a special tendency to stimulate the growth of hair. The naphthol alcohol dries, removes fatty substances and disinfects the scalp and prepares the pores for the absorption of the hair oil. Neatsfoot oil is recommended as it seems to be better absorbed and assimilated than a vegetable oil. Lanolin might also be used.

This treatment is equally effective in alopecia areata, and in all cases, where the process of destruction has not gone too far, certainly will stop the hair from falling out, so that the hair still in possession will at least be retained .

TREATMENT BY LACTIC ACID.

In giving the following treatment as a remedy for premature baldness, I shall quote it as written by a physician whose experience it narrates.

"During my college days I was severely troubled with headaches, the pain being mostly on the top of my head ; from that time on my head became dry and full of dandruff, and my hair came out until I was very bald. For five years I had my head shaved twice a week, but no favorable results came about, and I gave it up. I then tried crude petroleum and thorough massage to the scalp every day for more than a year, with negative results. Since then I have used a dozen remedies, but to no good effect.

"About a year ago I hit upon an application in which I had but little faith, though I used it two or three times a month. Now I have hair enough to comb and part it as of yore.

"There is still a patch upon the extreme top of my head that is covered with very fine hairs, yet this patch is steadily growing smaller.

"The remedy that has done the work consists of a twenty-five per cent. solution of lactic acid in water. Rub this into the scalp every day until it causes pustulation. Then it is to be left off until the pustules disappear. Then it is to be used again in the same manner. After the hair began to grow I omitted the pustulating remedy and used

R	Lactic Acid	fl. ʒ j.
	Quinine Sulphate	gr. xx.
	Glycerine	fl. ʒ ss.
	Water	q. s. ad. fl. ʒ iv.
	Perfume to suit.	

"Mix by putting the quinine into the acid, making a clear solution, before adding the glycerine and water. Apply this to the hair as an ordinary dressing every day. While in the last formula the percentage of lactic acid is the same as in the former, the addition of the quinine and glycerine prevents the extreme irritation of the scalp. This irritation, I believe, is of great importance at the beginning of the treatment. This remedy does even more than grow hair. It restored the original dark color of my hair after I was as gray as a badger. (I have passed the 50 mark).

"Don't expect results in a month. Try it a year before you register any complaints."

ENURESIS.

The successful treatment of enuresis, especially the nocturnal form, is often attended with considerable difficulty. In the majority of cases, no pathological changes can be determined, and when present, they do not as a rule indicate the curative course of treatment.

Bed-wetting is said to be due to several causes: Irritability of the bladder, relaxation of the sphincter muscle of the bladder, or spasmodic contraction of the bladder. Treatment directed toward the relief of either or all of these conditions with the remedies they would suggest, is usually unproductive of good results. Occasionally a cure will be effected, but the average results are not such as will earn for the practitioner a reputation for special skill in the treatment of the condition.

The drug that will give the best results in a large percentage of cases, disregarding the cause, which can but seldom be correctly determined, is *Rhus Aromatica*, the Sweet Sumach that grows throughout the Eastern section of this country. The bark of the root is the part used.

The dose of the fluid extract is one drachm or less, and of the solid extract up to ten grains, yet full doses are seldom necessary, nor conducive to the best results.

As the patients are usually children, the doses need not exceed ten to fifteen minims of the fluid extract, or two grains of the solid.

In combination with *nux vomica* its selective action in this condition is strengthened and results more satisfactory.

As a dose for a child four to eight years old, the following formula will be eligible:

R	Ext. <i>Rhus Aromatica</i>	gr. ij.
	Ext. <i>Nux Vomica</i>	gr. $\frac{1}{4}$.
Mix.	Ft. Tablet No. 1.	

Sig. Give one such after supper and at bedtime. If no improvement is noticed in a week, increase the number of tablets to four a day, giving them in addition in the morning and at noon. Continue treatment one month after an apparent cure.

Little or no fluids should be taken after 6 P. M., and during the day an effort should be made to retain the urine as long as possible without inconvenience or injury.

In old men, when prostatic troubles cause urinary difficulties, these tablets, giving six to ten a day, in combination with fluid extract of Pichi, in drachm doses, four times a day, will be found an excellent treatment.

HYDROCELE.

THE RADICAL CURE.

The radical cure of hydrocele should not be performed in persons over sixty years of age, and never when the patient is subject to dropsical symptoms.

In younger patients, when free from such complications, this treatment should be employed, as a temporary inconvenience will render the patient free from annoyance for the rest of his life.

The operation should be performed in this manner:

The sac is punctured in the usual manner and about one-half of the fluid is withdrawn. The canula is then elevated and two drachms of a saturated solution of bichloride of mercury in glycerine is injected through it and mixed with the remainder of the fluid. After one minute, the whole of the fluid is withdrawn, special attention being directed toward its *entire removal*. Very little pain is experienced and the patient can usually move about immediately after the operation. Patient need not be confined to bed, but for a few days should remain quiet, and in a week he will be well.

The bichloride acts as its own antiseptic, yet instruments should be perfectly clean.

Note:—Do not use equal parts of a saturated solution of bichloride of mercury, in water, *and* glycerine, but a saturated solution of bichloride *in* glycerine.

ANOTHER METHOD.

After withdrawing all the fluid in the sac, inject into it a mixture of Lloyd's Specific Thuja and glycerine, one half drachm of the former to one and one-half drachm of the latter. This quantity is used in hydroceles from which one pint of fluid has been removed. When larger or smaller, use proportionate quantities of this compound. After injection, the scrotum must be manipulated so as to bring the fluid into contact with the entire sac. There will be swelling and inflammation for a few days, but little pain, and in four or five days the patient will be well.

Prof. Wyeth, of N. Y., used thirty minims of pure carbolic acid, injected into the sac, after all the fluid had been withdrawn. The advantages claimed for carbolic acid are certainty of action, freedom from pain and the mild degree of inflammation produced. In fifty cases treated by Prof. Wyeth, only two were not cured by the first injection.

Considering the effects of carbolic acid, as mentioned in another part of this volume, its employment in hydrocele is in line with modern practice. Its anesthetic action in burns and open wounds can easily be demonstrated and when introduced into the scrotum its action is similar. To insure perfect results the fluid should all be withdrawn, so that the acid will not be diluted, as diluted acid is painful and is absorbed.

Tr. Iodine, so often recommended for the radical cure of hydrocele, is an extremely irritating and painful agent, and is not used to any great extent at this time. In as much as other remedies can be employed which are in all respects preferable to iodine, there remains but little justification for its use.

VARICOCELE.

ITS TREATMENT.

The following modification of the well known ligation treatment for varicocele is a decided improvement over it, and can be relied upon in every particular; it is curative, safe, not painful and the operation requires but little time for its performance.

With the patient standing, so as to distend the veins, crowd them to the scrotal wall and pass a needle armed with an elastic ligature, through both scrotal walls, behind the vein, excluding the vas deferens and cord. The vas deferens can be readily distinguished by its tough cord-like touch. It is found back of the cord. When this has been done, let the patient lie down and by proper manipulation, empty the veins of all the blood, and tie, including the vein and skin in the loop, tight enough so that the ligature will cut its way out. Dress with a simple antiseptic dressing.

To carry the elastic ligature through, the best method is to thread the needle with a silk ligature which has attached to it the rubber ligature, and pull it through after the needle has been removed. In order that the rubber ligature may not pass through entirely thus making another passage of the needle necessary, attach an artery forceps to the end of it. When the ligature is in place, tighten it by passing both ends of the ligature through a tongue-tie and when tight enough keep in place by grasping the ligature with the artery forceps. Pass a silk ligature between the tongue-tie and artery forceps and tie tight. The rubber ligature is not tied into a knot, but is held together by a silk ligature. Use only the very best quality of rubber ligature, and see that it is perfect before using. The skin and vein will be cut through in the course of a week without inconvenience to the patient. There is no sloughing and barely forms a scab. Enclose as little skin in the ligature as possible. The operation is extremely simple, yet highly satisfactory.

URETHRAL STRICTURE.

TREATMENT BY THE SOLVENT METHOD.

By reason of the persistent advertising of this method by the irregular specialists, considerable interest has been aroused and many inquiries have been received concerning it.

The idea of this treatment has evidently been derived from the knowledge that diphtheritic and other false membranes are dissolved and destroyed by the digestive ferments.

The passage of casts from the urethra, sometimes of considerable size and formation, after treatment by this method, would seem to warrant hope of benefit from its use.

The following formula may be used for this purpose :

R	Ext. Hyoscyamus	gr. ss.
	Ext. Calendula	gr. j.
	Carica papaya	gr. j.
	Powd. Elm	gr. v.

Mix. Form into one bougie and place into the constricted portion of the urethra.

Prior to the introduction of the bougie the stricture should be dilated. If difficulty be experienced in the introduction of the sound, the injection of a few drops of fluid extract of hyoscyamus will cause relaxation and facilitate its passage. Use a bougie each night.

The following formula is offered for the same purpose, also for acute or chronic gonorrhoea. This ointment is penetrating, owing to the alboline; germicidal, owing to the mercury and silver; a solvent for the fibrous exudate, due to the pepsin and caroid.

The formula :

R	Yellow Oxide of Mercury.....	gr. xx.
	Oxide of Silver.....	̄ ij.
	Oleic Acid	̄ j.
	Powd. Scale Pepsin.....	̄ iv.
	Powd. Caroid	̄ iv.
	Alboline	̄ ij.
	Lanolin	̄ ij.
	Water	̄ ij.

Mix as follows: Dissolve the oxides of mercury and silver in the oleic acid and albolene. To do this it is necessary to triturate the oxides in a large mortar dry, then add oleic acid, and continue the trituration till the mass begins to stiffen; then add the albolene quickly, and the trituration must be continued till a uniform paste is obtained. Then add the lanolin, and rub it well into the mixture. Finally, having dissolved the pepsin and caroid in the water, and filtered it through a funnel lightly plugged with absorbent cotton, (this is necessary, as the caroid has grit in it), add this aqueous solution to the salve in the mortar, and triturate the whole till it is a uniform, creamy paste. These details are important, and any departure will result in a lumpy, uneven mass, that is not only inelegant, but much inferior therapeutically. By means of an applicator, introduce into the urethra, at the point desired, half to one drachm of the remedy. For stricture, an application twice or three times a week will be sufficient, while for acute and chronic gonorrhoea, applications should be made night and morning.

Dr. T. W. Williams informs me that he has often observed the passage of casts from the urethra, following applications of citrine ointment in the treatment of prostatic disease, described in the latter portion of this work.

The applications can be best made with the Urethral Applicateur described in Dr. Williams' article just mentioned.

MEDICAL MELANGE.

PRACTICAL AND HELPFUL.

It is often the little things that cause us the most worry and anxiety. Hundreds of good practical suggestions are yearly published in medical journals, but are frequently lost sight of in the mad scramble to learn the latest development in Prof. Scientific's pathological researches; to become acquainted with the latest classification of microbes, or indeed to be the first in any locality to experiment on some unfortunate individual with the latest product of some German paint or dye factory. A well developed and misbehaving corn on the last quarter of an inch of a man's anatomy often causes him more annoyance and genuine discomfort than a double complete inguinal hernia, and a wart or mole on the face of a society belle, will, if removed, be responsible for more recommendations of your skill than if you had repaired the lacerated cervix with which she suffers in the privacy of her home.

THE SOLAR CAUTERY.

The rays of the sun when properly focused are known to be irritant and caustic, destroying tissue and igniting inflammable material.

As a therapeutic agent the solar cautery is not generally employed, and yet some physicians, especially dermatologists and cosmetic specialists use it quite extensively and to good effect. For the purpose of focusing the rays properly at a convenient distance, a lens of ten to twelve dioptric power is preferable. Several lenses should be procured, each of different power. Some lenses will not focus as well as others, and care should be used in selecting them. For some reason

or other a blue glass, medium tint, seems to act better when a great deal of tissue is to be destroyed. Some claim that the blue light is antiseptic and kills parasites and microbes quicker than a colorless lens. Small growths of the skin, such as warts, moles or a capillary aneurism can be removed by one treatment and without much pain. The pain will be proportionate to the tissue destroyed. To prevent pain a local anesthetic is employed, usually cocaine in four per cent. solution. Eucaine, chloretone or strong carbolic acid may also be used. The anesthetic is applied to the growth to be removed and the growth covered with a piece of asbestos cloth with a small hole in the centre, just large enough to allow the growth to be treated through the hole without injuring the surrounding parts. Paper may be used for this purpose, but it frequently ignites and causes annoyance and delay. After an application of a few seconds more anesthetic may be applied, and thus repeated until the treatment is completed. Warts are usually not sensitive until the deeper structures are reached, and small warts may be burnt level with the skin without any material discomfort. A wart will smoke and sizzle, but a mole will not, but the latter will form a blister and the application must be continued a little beyond forming a blister. If one treatment is not sufficient, as can be seen after a week or ten days, the treatment must be repeated. Continue the application until you have burnt level with the skin when treating warts; and a trifle longer than to raise a blister when treating moles. If the patient complains of pain continue as long as he keeps still, then apply more anesthetic and continue. If the burn is not too deep there will be no scar following this treatment. In Epithelial cancers, if seen early, this treatment is strongly recommended and will frequently arrest the disease. Burn deep, without regard for the scar that will take its place. This disease is not treated for its cosmetic effect. Corns can easily be cured by the solar cautery. Pare away the calloused skin and make several strong applications. A little soreness follows but it kills the corn. Repeat until entirely relieved.

WARTS may also be removed by the following method, which is more applicable when these excrescences are multiple or confluent.

R Sulphur Sub ̄ v.
 Conc. Acetic Acid..... fl. ̄ iiss.
 Glycerine fl. ̄ ij.

Mix. This paste is applied to the warts either with a brush or spread over them on small pieces of linen. This is done at night and washed off in the morning. Repeat the application thus for several days. Under this treatment warts become blue, shrivel up and drop off.

AN EXTERNAL REMEDY FOR RESPIRATORY DISEASES.

One of the oldest remedies in use to-day is the one of which the formula is here given. It is of doubtful origin, but highly spoken of by such eminent practitioners as Aitkin, Stokes and Graves, to say nothing of the lesser lights who are using it in their daily routine of work with excellent results.

R Spts. Turpentine fl. ̄ iij.
 Acid Acetic fl. ̄ iv.
 Yolk of Egg..... One.
 Rose Water fl. ̄ iiss.
 Oil of Lemon..... fl. ̄ j.

Mix. First rub the yolk of egg, the water and the acetic acid together in a mortar until an intimate mixture results, then add the spirits of turpentine and shake vigorously; lastly add the oil of lemon. In bronchitis, asthma, congestion of the lungs, pleurisy and even in phthisis this remedy cannot be too strongly recommended. The chest and neck should be sponged with it morning and evening. It not only acts beneficially on account of its counter irritant action, but the remedy is absorbed and acts as a direct stimulus. It

produces more or less redness of the surface, but its beneficial action does not seem to depend on the degree of redness produced, hence my conclusions that it is absorbed. Its action on the kidneys, by which the flow of urine is increased, is quite marked; the noticeable odor of turpentine in the urine being an evidence of this fact. In simple swelling of the tonsils and inflammation of the throat, so often met with in children, it should be applied to the neck and a flannel bandage applied. In bronchitis and congestion, the entire neck and chest should be rubbed with it. In asthma, its daily use, when paroxysms are frequent, is indicated, and during the paroxysms especially an application should be made. The great relief and entire dissipation of the paroxysm which I have so often seen follow an application of this remedy, is sufficient to stamp it as one of our best. In the dyspnoea accompanying pneumonia, pleurisy and phthisis its application will almost invariably afford relief. Other treatment is not interfered with and can be given as indicated.

USES OF CARBOLIC ACID.

Carbolic acid, besides being one of our best antiseptics, and in many cases to be preferred to bichloride of mercury, has other uses which make it worthy of special mention. It is the only drug that combines cauterant, anesthetic, antiseptic and antiphlogistic properties.

The most astonishing use of carbolic acid is its application, pure and undiluted, to open surfaces, abscess cavities, freshly exposed tissues and burns. When carbolic acid is thus applied pure and undiluted, it is a perfectly harmless agent. Its application to burns, where the skin has been destroyed and the tissues injured, and the victim suffering intense pain, will almost immediately cause the pain to cease.

It should be applied with a feather or camel's hair brush. If thus applied there is absolutely no absorption, as the acid

forms with the serum of the blood an impervious albuminate, which renders absorption impossible. This covering also excludes the air and acts as an anesthetic to the injured nerve filaments. If the covering thus formed should become disturbed by the removal of bandages, another application should be made. This treatment was originated as far as can be ascertained by Dr. Ben. H. Brodnax, of Brodnax, La., and was favorably commented upon by Dr. O. H. Allis, of Philadelphia, Pa., who also read a paper on the subject before the Philadelphia Medical Society, extracts of which were later published by the Philadelphia Polyclinic. Dr. Allis says: "It will strike many of you with astonishment when I say that it would be safer to pour a gallon of pure carbolic acid into a purulent thoracic cavity than to pour into it a gallon of water into which a single ounce of carbolic acid had been placed. I will go further and say that excess of the strong acid in a cavity, such as an abscess cavity, or upon exposed tissues, as a burn or a fresh wound, does no harm, while excess of a dilute solution, if left in a cavity or used over an extensive raw surface, will be promptly followed by dangerous, if not fatal toxic effects." It requires some courage to apply strong carbolic acid to a raw, glaring, quivering wound, but prompt and excellent results will immediately follow the application. It should be applied thoroughly, all over the wounded surface, up to the very margin of the uninjured portion, and a light cotton dressing applied. No other local treatment is required in these cases, and nothing better nor safer can be obtained. The acid to be used must be the full strength, not the acid to which five or ten per cent. of glycerine has been added to maintain solubility, but the liquid resulting from heating the crystals.

For the purpose of liquefying carbolic acid, it should never be heated in any other manner than in a water bath, with the cork removed. The vapor is inflammable and may explode if brought into contact with the naked flame. After being liquefied it will remain so, if kept at a temperature of 105° F.

TO ABORT BOILS, carbolic acid should be injected into the centre of the boil, two or three drops being sufficient to do the work. Use the pure acid fearlessly. There is no pain and no danger.

For hypodermatic or deep injection, it is impossible to prevent crystalization in the syringe and needle, unless the instruments are kept warm. After filling a syringe, place it into hot water a few minutes, and inject quickly. A good syringe will not admit water, even if immersed.

LANCING A FELON can be painlessly accomplished by dipping the finger into a twenty per cent. solution of carbolic acid and allowing it to remain there for a few minutes. Wait half an hour before lancing. No pain will be felt.

ANTIDOTES. The best antidote to carbolic acid is Alcohol. The action of carbolic acid may be arrested at any stage by the application of alcohol. If accidentally swallowed, alcohol is the remedy. Glycerine also partakes of this property to some extent, but is not as active as alcohol. Acetic acid is even better than glycerine; it will destroy the odor of carbolic acid, and if applied to the white surface caused by its contact with the skin, will, by gently rubbing the part, restore its natural color in a short time.

Carbolic acid is also a valuable addition to cocaine solution intended for hypodermatic injection. It renders absorption less liable, aids anesthesia and preserves the solution. The usual proportion in solutions of this kind is eight drops to the ounce.

FLEXIBLE SPLINTS.

The flexible splint, if well made and of good material, has much to commend it. It conforms perfectly to the part to which it is applied, is comfortable to the patient, and by its rigidity assists in perfect union being obtained. The following formulæ are the best obtainable for the purpose:

R	Powd. Gum Shellac.....	℥	xvj.
	95 % Alcohol.....	fl. ℥	xxiv.
	Sodium Biborate.		
	Castor Oil	āā	℥ ij.

Mix. Dissolve the shellac in the alcohol and add the other ingredients and shake well.

Old woolen cloth is the best material for making splints. Apply the solution to one side with a paint brush and dry before a hot fire. Then apply a second coat to the same side and dry as at first. Take two pieces thus prepared and place the two coated sides together and unite them firmly by pressing them with a hot iron. When ready to use a splint thus prepared, dip it in hot water or heat before a fire until pliable. Shape the splint by holding it in place until it sets. Line it with cotton and apply it, keeping it in place with the ordinary bandage. The same splint can be used over and over again until too much soiled.

A SECRET FORMULA.

The following formula was sold by a Western physician for four dollars. He called it "Chydde's Solution."

R	Liquor Soda-silicate	fl. ℥	xvj.
	Dextrine	℥	x.
	Venice Turpentine	℥	j.
	Alcohol	fl. ℥	iv.
	Acid Boracic	℥	j.

Mix. It is used in the same manner as the other.

PAINLESS TOOTH EXTRACTION.

Physicians are frequently called upon to extract teeth for the relief of pain, and to such the following formula will commend itself. If properly injected there is really but little pain experienced. It is very similar in appearance and odor to a well known proprietary article sold to dentists at \$1.00 per ounce.

℞ Cocaine Muriate gr. xx.
 Ac. Carbolic, cryst..... gr. xxiv.
 Gum Camphor gr. xxiv.
 Alcohol, 95 %.....q. s. ad. ̄ j.

Mix. Inject three minims of this mixture deeply into the gum on the inner and outer side of the tooth, and apply all around it a piece of cotton wet with the solution. Allow it to remain three to four minutes, incise the gum freely and extract. Always pull outward when extracting teeth, no matter in what direction the tooth points.

Another, for local application :

℞ Oil Gaultheria fl. ̄ ij.
 Chloral Hydrate ̄ ij.
 Chloroform.
 Sulphuric Etherāā fl. ̄ j.
 Oil Cloves fl. ̄ iv.
 Alcohol fl. ̄ xij.

Mix.

Apply by means of cotton saturated with the solution. Allow it to remain five minutes. Protect surrounding tissues by placing dry cotton about the inner and outer side of the tooth.

 CHLORAL—CAMPBOR.

When Chloral Hydrate and Gum Camphor are mixed in equal parts and triturated in a mortar, a heavy, oily liquid results which is a veritable cure-all. A pledget of cotton saturated with it and placed in the cavity of a decayed tooth will almost immediately relieve the pain of tooth-ache;

applied along the nerve trunks in neuralgia the relief is almost immediate and quite lasting; painted over the abdomen, especially in the region of the ovaries, it relieves the pain of dysmenorrhoea and ovarian neuralgia. By the addition of Carbolic acid its value is increased and is applicable to many other diseased conditions. When Carbolic Acid is added, use equal parts of each; Gum Camphor, Chloral Hydrate and Carbolic Acid crystals. It is a sterling remedy for all external sores and ulcers, chancres or syphilitic sores, suppurating cavities, or to stimulate granulations of indolent ulcers. It may be diluted one half to one third and used in sore throat with a brush, and to ulceration of the cervix or mucous patches. The compound containing the acid is less painful but even without it the mixture is not severe. For the purpose of dilution olive oil or a hydro-carbon oil should be used.

“Success requires not something new
To win applause and recognition,
But doing that which others do,
Beyond their range of competition.”

DRUGS USED.

As pure and reliable drugs are of necessity essential to success, considerable care should be exercised in their selection.

When fluid extracts are purchased, original packages should be secured if possible, and as all of the principal pharmaceutical firms supply packages of as low as four ounces, there is little excuse for using drugs of unknown or uncertain quality.

Tinctures made from standardized or physiologically tested extracts are entirely reliable.

Chemicals, especially those of a delicate or unstable nature, should be selected with due regard as to their purity, and deterioration guarded against. Those made by Merck, Mallinckrodt or other reliable chemists are to be preferred to the inferior commercial salts often found in the shops.

Carbolic acid, either Mallinckrodt's Gilt Label, or Merck's Dry Crystals, is fully as effective and reliable as Calvert's English product, and much less expensive.

Peroxide of Hydrogen is such an unstable and variable article that specimens purchased in the open market are frequently devoid of any cleansing or stimulating properties, or may even be irritating and injurious.

Marchand's Hydrozone and Medicinal Peroxide of Hydrogen, the former of thirty volumes and the latter of fifteen volumes strength, are superior preparations and have given me better results than any similar preparation.

SECRET SYSTEMS EXPOSED.

The Medical Profession has for all time past been considered somewhat of a "pasture green" for the scheming individual representing a company who had a "Secret System" for sale. Many physicians have been severely imposed upon by this smooth tongued gentry and have been induced to pay exorbitant sums for the "secret" and the exclusive right to use the same in a certain limited territory. Many of these secret systems possess merit, and it is not on the account of worthlessness or misrepresentation that objection to this method of doing business is made, but on account of the unreasonable fees which are asked for and received, being in most cases prohibitive and practically limiting the field to the few whose income warranted the outlay, and which therefore was already above the average. This method of furnishing information is also not in accord with the broad spirit of the medical profession, nor with the liberality which characterized the fathers of medicine to whom we are all greatly indebted. While a great deal of this sort of business was carried on by personal representation, the advertising pages of many medical journals carried advertisements bringing secret systems of this class to the notice of the profession, instances of which can probably be recalled by anyone. Through the courtesy of a number of professional friends and the outlay of considerable cash, the author is enabled to place before the profession the majority of the better known systems of this kind. That they possess some merit is evident from their composition, whether to a greater or lesser degree than many of the more familiar combinations of remedial agents, depends perhaps on the degree of skill with which they are applied.

If their introduction here will assist in satisfying a curiosity known to exist among medical men, and in a measure lift the sombre robe that clothes some of the secrets and mysteries connected with the healing art, the objects for doing so will have been accomplished.

THE TRIUMPH SYSTEM OF TREATING DRUG AND OTHER ADDICTIONS.

Several years ago a representative of this concern located in Knoxville, Tenn., canvassed this and other states in the interest of the following Secret Systems for the Treatment of Drug and Other Addictions, which was sold to physicians at figures varying from \$10.00 cash to \$50.00 or more in installments and commissions.

This is a fair specimen of what is sold to physicians under agreements of secrecy, although it must be acknowledged that this system is somewhat above the average of those usually offered. It is not very well adapted to the use of the physician in general practice, but rather to those having special facilities for the care and treatment of patients.

It must be borne in mind that no system or method of treatment is so complete that it will yield perfect results in all cases, nor so inflexible that no changes or variations may be made to meet the indications present. In giving it here in its most essential parts, I am not stamping it with my approval, nor in fact the contrary, but more especially as an addition to our information along these lines of practice. The more general knowledge on these subjects at our command, the better are we able to successfully cope with the various phases of drug, liquor and other addictions.

The following extract contains all the essentials of the method.

THE WHISKEY CURE.

Injection Hypodermatically.

R Strychnine Nitrate gr. 85-100
 Atropine Sulphate gr. 40-100.
 Sol. Boracic Acid 2 %..... fl. $\frac{3}{4}$ j.

Mix.

Details. Take six two drachm vials, marked from No. 1 to No. 6, and into each of them put 100 minims of the above formula.

Leave vial No. 1 as it is, without any additions. To each of the others add nitrate of strychnine, in the form of hypodermatic tablets, as follows:

To vial No. 2 add five 1-40 gr. tablets.

To vial No. 3 add ten 1-40 gr. tablets.

To vial No. 4 add twenty 1-40 gr. tablets.

To vial No. 5 add thirty 1-40 gr. tablets.

To vial No. 6 add forty 1-40 gr. tablets.

Commence the treatment with No. 1 and continue for three or four days. If toxical effects are not produced try vial No. 2 for three or four days, and so on with the other numbers until you get the effect.

Or, you can work this way: one or two doses of No. 1, then one or two doses of No. 3, then one or two doses of No. 2, then one or two doses of No. 1, skipping backward and forward this way. Do not use vial No. 5 and No. 6 until as a last resort as the best results are obtained by the use of vials No. 1 to No. 4. If the toxic effect is not produced by the time No. 4 is reached, return again to No. 1 and proceed in same manner as before. Don't expect toxic effect for four or five days, viz: twitching of the muscles, stiffness of the jaws, dryness of the throat, etc. As soon as you reach this point, go back to No. 1 and use that only. You can maintain the toxic effect by using the weakest solution, and the least medicine given a patient is always best.

THE DOSE. The dose of each of these vials is five minims, hypodermatically, and a dose should be given at 8 A. M., 12 M., and 4 and 8 P. M. Cards should be given each patient with the number of vial and time marked thereon.

On the fourth day of the treatment, ask your patient if he has a desire for whiskey. Of course some will say "yes." Don't be alarmed at this. Tell them that you don't see how it is as you are sure the medicine has taken effect or is about to do so as it usually does about this time. Then tell them you want to see them take a drink so as to note the effects, and send them out to purchase some whiskey, as you don't want to furnish it to them, as they might think it was drugged. This must be done at one of the regular times for a hypodermatic injection, and in place of it you will substitute 1-10 gr. Apomorphine, giving it immediately before the whiskey. Repeat this once a day until the taste and smell of whiskey is disgusting to them.

Never increase the dose of any one of the vials, on account of the Atropine contained therein, but if a stronger effect is required, pass from one vial to the other as directed.

Continue the regular treatment for three weeks or more after the taste and smell of liquor is distasteful or disgusting to the patient, according to the demands of each case. Cases of Delirium Tremens can be best handled by using No. 1 vial with 1-250 gr. of Hydrobromate of Hyoscyamine added to each dose.

WHISKEY TONIC.

R Acid Muriatic, Free C. P.....	gr. 2048.
Calcium Phosphate.....	gr. 768.
Magnesia Phosphate.....	gr. 1024.
Hydrastis Canadensis.....	gr. 256.
Quinine Muriate.....	gr. 256.
Strychnine Nitrate.....	gr. 10¼.
Pulsatilla	gr. 256.
Aromatic Menstrum.....	q. s. ad. Cong. j.

Exhaust the Hydrastis and Pulsatilla with sufficient dilute alcohol, add the other ingredients secundum artem, and add an aromatic elixir to make one gallon. The finished product should contain 20 % of alcohol.

Dose. One teaspoonful every four hours, to be taken between the hypodermatic injections, at 6 and 10 A. M., 2, 6 and 10 P. M., if patient is awake first and last hour. After the hypodermatic injections are discontinued, continue the use of this tonic for a few weeks, twice a day, adding 1-60 grain Strychnine Nitrate to each teaspoonful.

Before starting the treatment, obtain the full consent and confidence of the patient, and have him stop all work and worry for a few days. This should be observed in the treatment of all addictions.

The maximum doses must be reached gradually and when the toxic effects become evident they should be reduced. Should an antidote become necessary give plenty of whiskey and chloral hydrate. It is always necessary to exercise good judgment with patients, watching for idiosyncrasies and observing the action of the heart, &c. Begin treatment with caution, especially the nervous, weak and wornout patients. When patients refuse liquor the Atropine in the injection may be withdrawn, and 1-60 grain doses of Picrotoxine substituted. If this causes copious perspiration it should be withdrawn. Warm baths should be taken every two or three days. The bowels should be kept moving with calomel, ipecac and soda. Small quantities of liquor may be given patients the first day or two, but then should be discontinued.

Remarks. Some discretion should be used in the selection of whiskey patients. Examine each case closely before treatment, especially the action of the heart and nervous system that you may note with benefit to yourself the changes that will be produced by the action of the remedies used. Question them particularly as to why they drink, whether for the love of the taste of it or for the effect produced. If the former you need not hesitate to take the case and guaran-

tee a cure, for you will make the taste and smell, even the thought of it, disgusting to them. If they drink for the effect, don't fail to give the treatment faithfully and don't omit the apomorphine as directed, repeating each day until the taste is gone and it becomes nauseating to them. Whether they drink for the taste or effect, give the apomorphine as directed.

THE OPIUM AND MORPHINE CURE.

Hypodermatic Injection. Same as for whiskey, viz: vials No. 1 to No. 6, given every four hours, adding to each injection 1-200 grain of Hydrobromate of Hyoscyamine. Continue from one to three weeks or longer as the case demands.

Also, take Two Four ounce bottles and fill with the Opium and Morphine Tonic, (see formula below) and number them No. 1 and No. 2. Bottle marked No. 1 is left as it is, but to bottle No. 2 add three-fourths of the amount of morphine taken by the patient in one day, either hypodermatically or by the mouth.

Give the patient a teaspoonful of No. 2 four times a day, between the injections, and replace each dose taken from No. 2 with one teaspoonful of No. 1. This is the best system of gradual reduction that can be obtained. After finishing these two bottles, continue the injections as before, and the following

OPIUM AND MORPHINE TONIC.

℞ Hydrastis Canadensis,
 Avena Sativa,
 Pulsatilla āā ̄ viij.
 Cinchona Rubrum ̄ xvj.
 Nux Vomica,
 Xanthoxylum Berries āā ̄ ij.
 Powd. Capsicum ̄ ss.
 Dilute Alcohol q. s.
 Aromatic Menstrum q. s. ad. Cong. j.

Exhaust the drugs by percolating with sufficient dilute alcohol and add an aromatic elixir, to make one gallon. The finished product should contain 20 % alcohol.

Dose. One teaspoonful every Four hours.

The morphine patient cannot be trusted and the attending physician and nurse should always be on the alert, examining the pupils of the eye frequently. If you can keep them without using the drug for a week you may be assured of success. Tell them that you will reduce them gradually, but do not tell them when you give them their last dose. When the change is made from bottle No. 2 containing the morphine, they will not know the difference but will think they are taking another bottle of the same. Any emergencies that may arise should be treated as in any other case. Never increase the hypodermatic injections; if you want larger doses pass from one vial to the other as directed.

TOBACCO CURE.

For the cure of the habit of either chewing or smoking tobacco we give the following formula:

℞ Hypodermatic solution, same as
 in whiskey treatment..... 3 ½.
 Tr. Plantago Major..... 3 ¾.
 Tr. Avena Sativa..... 3 ¾.

Mix. Sig. Give three drops each time a person feels like taking a chew or a smoke, and after each meal, asking the patient to assist you by lessening the number of chews or cigars each day.

Give also five minims from vials No. 1 to No. 4, hypodermatically three times a day. In nine to fourteen days the taste and smell of tobacco will become disgusting. Stop the use of tobacco entirely and continue the use of the first formula above mentioned by simply touching the tongue with the solution whenever the desire comes on, if it does at all, or three to six times a day for a while, even if no desire is noticed.

The Whiskey Tonic may also be given for a week or ten days, a teaspoonful three times a day. If after the ninth day the patient still persists in chewing or smoking, give 1-10 grain apomorphine after a chew or a cigar, and continue this once a day, at the time for the regular injections.

CIGARETTE CURE.

Begin the treatment by giving hypodermatic injections from vials No. 1 to No. 4 every four hours, adding to each dose 1-40 grain of Picrotoxine. Continue this until patient sweats copiously. Then have an attendant give the patient a hot sponge bath, or steam, cooling him off gradually, with a shower, rubbing until dry.

Use now the following formula hypodermatically, two to four times a day.

℞ Whiskey Injection..... fl. ʒ ij.

Tr. Cannabis Indica..... ℥ v.

Mix. Sig. Five to ten minims hypodermatically, as above directed, using your judgment in individualizing your case, the dose to be used and the number of them per day. Continue these injections at least three to four weeks. Give also at the same time the following formula:

℞ Whiskey Tonic..... fl. ʒ v.

Tr. Avena Sativa..... fl. ʒ j.

Mix. Sig. One teaspoonful three to four times a day. If patient becomes very nervous use the following formula:

℞ Thein, (Merck)..... gr. viij.

Acid Boracic..... gr. ij.

Aqua Destil..... fl. ʒ j.

Mix. Sig. Inject from Five to Ten drops as often as required, as your discretion indicates.

The hypodermatic injections are usually given at 8 A. M., 12 M., and 4 and 8 P. M. The tonic at 6 A. M. and between the injections. The number of cigarettes should be decreased by 1-2 or 1-3 each day, and in four or five days discontinue them entirely. If the patient stubbornly persists

in snoking give him the usual dose of Apomorphine immediately after lighting a cigarette, and continue this daily until he becomes disgusted with them. The entire treatment should consume from four to six weeks.

REMARKS—The alkaloids mentioned in this system can be purchased from first class drug houses, in hypodermatic tablets. No crude or commercial drugs, or tablets, or triturations should ever be used hypodermatically. Sharp & Dohme, of New York and Baltimore, are at present the only house listing the Hydrobromate of Hyoscyamine.

THE KEELEY SYSTEM.

The following formulae were given me by a physician who was formerly employed in a Keeley Institute, with the assurance that they are correct. The same formulae are published in a small booklet published by a physician in the West, which corroborates the statement made by the physician giving them to me. I give them here for what they may be worth, assuming no responsibility for whatever results may follow their use.

On entering the institute the patient is given a mixture containing the following:

℞ Gold and Sodium Chloride..... gr. xxx.
 Strychnine Nitrate..... gr. iv.
 Atropine Sulphate..... gr. j.
 Glycerinefl. ʒ ij.
 Fl. Ext. Cinchona Comp. .q. s. ad. fl. ʒ xvj.

Mix. Sig. One teaspoonful in water three times a day.

In addition to the above, the patient receives a hypodermatic injection of strychnine nitrate, in doses that will produce its physiological effect. 1-60 grain additional will usually be all that is required, but it can be used as necessary.

R Solution.

℞ Acid Boracic..... gr. iv.
 Aqua Dest.....fl. $\bar{3}$ ij.

Mix and bring to boiling point and add

Strychnine Nitrate..... gr. ss.

Cool and filter and bring up to 2 ounces by adding Aqua Dest. Color red with Tr. Cudbear. Dose Five to Ten minims hypodermatically. This is begun when patient is sober and continued during the treatment. Give an injection every four hours.

T Solution.

℞ Acid Boracic..... gr. xx.
 Aqua Destilfl. $\bar{3}$ j.
 Thein Muriate..... gr. viij.

Mix. Filter. Bring the water and boracic acid to boiling point before adding the Thein Muriate.

Dose. Five to Ten Minims every four hours, by hypodermatic injection. This is the "sobering up" solution.

P. Solution.

℞ Pilocarpine Muriate..... gr. viij.
 Acid Boracic gr. xx.
 Aqua Destil.....fl. $\bar{3}$ j.

Mix in same manner as previous solution.

Dose Five to Six minims. This is used in the tobacco treatment, or to produce sweating at any time should the skin become too dry. It causes some nausea.

M Solution.

Magendie's solution of Morphia.

For nervousness during liquor treatment, as necessary.

If the desire for liquor does not disappear in a few days, atropine sulphate is given hypodermatically in sufficient doses to produce its full physiological effect.

The strychnine solution is colored red, as shown in formula; the atropine solution is left colorless, solution being made with distilled water; the apomorphine solution is kept in a blue bottle. When the patient's appetite for liquor does not disappear, in connection with the strychnine and atropine solutions, he receives in addition an injection from the blue bottle.

In the language of the inmates of the institution, this arrangement of the colors, red, white and blue, has been termed the "barber pole" and whenever the apomorphine solution was used, the patient was said to have received the barber pole.

The formula of the apomorphine solution is as follows:

Add 1-20 grain Apomorphine to Eight minims of "T" solution and Four minims of "R" solution.

Inject this hypodermatically and follow with a drink of whiskey.

This will sicken them and will render the taste and smell nauseating to them. Give this at a regular injection hour.

When the desire for liquor has been gone for several days, the following internal treatment is gradually substituted for the first formula. They may be alternated for a few days, before discontinuing the first formula entirely.

INTERNAL TREATMENT.

℞ Ext. Cinchona, solid..... gr. xl.

Grd. Gentian Root..... ʒ ij.

Powd. Capsicum..... gr. xx.

Mix and boil in Four pints of water for Twenty minutes, and add

Glycerine.....fl. ʒ iij.

Remove from the fire and add Grd. Bitter Orange Peel, ʒ ss. Let stand until cool, and strain. Color with Caramel.

Sig. One teaspoonful every 2 hours in 1-2 glass of water.

After cure, continue same four times a day for a few weeks.

If patient wants whiskey, (first request) precede by a full dose of Calomel. If he persists give 1-20 grain Apomorphine with each drink.

FOR ALCOHOLIC GASTRITIS.

℞ Pepsin Sacch..... gr. cl.
 Bismuth Sub Nitrate..... gr. c.
 Powd. Capsicum..... gr. xx.
 Mix. Ft. Pulv. No. xx.
 Sig. One every four hours.

FOR NEURASTHENIA.

℞ Tr. Cinchona Rub..... fl. ʒ ij.
 Fl. Ext. Kola..... fl. ʒ ij.
 Fl. Ext. Scutellaria..... fl. ʒ j.
 Elixir Aromatic.....q. s. ad. fl. ʒ vj.

Mix. Sig. One teaspoonful in 1-2 glass of water four times a day.

Also "T" solution, Five to Seven minims four times a day.

KEELEY TOBACCO TREATMENT.

Inject Three to Five minims of "P" solution every other day, and Five to Seven minims of "T" solution four times a day. Also the following formula:

℞ Fl. Ext. Calumba..... fl. ʒ ss.
 Tr. Quassia..... fl. ʒ ss.
 Sp. Vini Rect..... fl. ʒ ss.
 Aqua.....q. s. ad. fl. ʒ iv.
 Mix. Sig. One teaspoonful every two hours.

TRI-ELIXIRIA.

As a treatment for drug addiction, more especially opium and morphine, the Tri-Elixiria remedies have been rather extensively advertised in medical periodicals, and on this account inquiries as to their composition are occasionally received.

Personally, knowledge of this treatment is limited to but one patient who applied to me for treatment, after spending some time at the sanatorium in Memphis, Tenn., where the treatment was employed under the direction of those interested in its manufacture and sale.

This patient, a physician, coming to me for treatment for a mild form of morphine addiction, is sufficient evidence of the failure of the treatment through which he had just passed.

In regard to Mandragora, the drug upon which they seem to place chief reliance, the following comment is made, quoted from the U. S. Dispensatory: "Mandragora is a perennial European plant with a spindle-shaped root, which is forked beneath, and is therefore compared with the human figure. In ancient times, this root was supposed to possess magical virtues, and was used as an amulet to promote fecundity. It was much used by the ancients with a view to its narcotic effects. It is unknown as a remedy in the U. S." This last statement is open to question, as in Prof. Waugh's excellent work, "The Treatment of The Sick," the following statement is made: "Mandragorine (Alk.) supposed to be the active principle in the Keeley cure for alcoholism. Dose: Gramme, 0.00025; grain, 1-250, cautiously increased, hypodermically." Mandragorine is also mentioned in an article written by Prof. Waugh in 1894, on the treatment of alcoholism. He says "Decidedly, mandragorine

excels atropine—the former being less unpleasant and more efficient.”

Mandragorine is the alkaloid of *Mandragora Officinalis*, first isolated by Crouzel. It resembles atropine in its action but it is not indetical with it. It dilates the pupil.

The literature of the company contains the statement that in order that physicians may prescribe Tri-Elixiria intelligently, the component parts of the remedy are made known, and are as follows: The absence of the definite quantity of “*Mandragora Off.*” in the formula, is, in the light of the appended extract from the Alkaloidal Clinic, quite significant.

The formula :

R	Rhubarb, (F. E.,)	℥ iv.
	Prickley Ash, (F. E.,)	℥ iv.
	Colombo, (F. E.,)	℥ v.
	Hops, (Elixir,)	℥ ix.
	Lactucarium, (Elixir,)	℥ vj.
	Celery, (Elixir,)	℥ viij.
	Brew	℥ viij.
	Gentian, (F. E.,)	℥ v.
	Scull Cap., (F. E.,)	℥ iiij.
	Valerian, (F. E.,)	℥ v.
	Licorice, (F. E.,)	℥ iiij.
	Ammonia, (Mur.,)	gr. ij.
	Hydrastia, (Mur.,)	gr. 1-16.
	Mandragora Off. (Ext.,)	q. s.

Dose. One teaspoonful in 1-4 glass of water eight times a day, for opium and its preparations, as Morphine. Laudanum, etc., and for other drug addictions.

THE MANDRAGORINE FAKE.

The following is clipped from the Alkaloidal Clinic :

We have received a number of requests for information as to Mandragorine; and as we are originally responsible for the attention paid to this alkaloid, we herewith give some pointers as to it.

Benjamin Ward Richardson made some experiments with mandragorine and stated that there were certain differences between its action and that of atropine. A very acute observer who had studied this matter while taking the Keeley treatment for alcoholism came to the conclusion that mandragorine was the agent used hypodermically, as the effects corresponded with those described by Richardson. Inquiry failed to find any mandragorine in the country; in fact the only supply we could obtain was a small lot of the mandragora root discovered in a country drug store, from which we had the alkaloid extracted and made up into tablets. This we believe is the only mandragorine that has been in America during the past ten years.

We corresponded with Merck in relation to a supply, but found that it could only be obtained by special arrangement, since there was no call for it and none was prepared for the trade. This would run the cost into hundreds of dollars, more than the importance of the article justified, especially as mandragorine is simply a mixture of atropine and hyoscyne, and not in fixed or invariable proportions. As it is an easy matter to mix these agents to suit ourselves in prescribing, it did not seem advisable to import the "mandragorine." In the mean time the matter has been taken up by a number of the dealers in secret methods of treating alcohol and drug habits, probably because the general and medical public knows nothing about mandragorine and cannot procure it. This offers the desirable situation of non-secrecy and impossibility of obtaining a supply except through the exploiters; and under this very ethical arrangement the usual morphine may be dispensed as a cure for the morphine habit, cocaine

to cure the cocaine habit, alcohol to cure the whiskey habit, etc.

If any one desires to use "mandragorine" he may give hyoscine gr. 1-100 with atropine gr. 1-250, and he will have it, without the expense. The advertisements tendering this alkaloid are to be placed on a par with those offering "red lava flower," "halish sativa," etc.

In order to learn whether any one was really buying mandragorine, we wrote to the leading purveyors of alkaloids, asking if they could supply it. We append the only reply received. The deduction is obvious.

"NEW YORK, July 16th, 1903.

"We are in receipt of your favor of the 11th inst., and in reply would say that we are not in a position to furnish mandragorine. In this connection we would mention that some years ago a certain investigator believed he had discovered in *atropa mandragora* a new alkaloid which he named "mandragorine." Subsequent investigations, however, have proved this supposedly new alkaloid to be a mixture in which hyoscyamine predominates—practically impure hyoscyamine. Trusting that the above information will be of interest to you, we are,

"Faithfully yours,

"MERCK & Co."

THE "HUSA" SWINDLE.

A few years ago, the medical profession was considerably interested in an article that was being widely quoted by medical journals, regarding the discovery by a physician from Texas, of a plant which had the power to neutralize the poisons communicated to persons bitten by all kinds of venomous serpents and reptiles, and which also enabled any physician to cure the opium or morphine habit in short

order. This drug he called "Husa," and its origin was said to be in the everglades of Florida. Samples of the crude drug could not be obtained, but the doctor kindly consented to supply a liquid preparation of it at a fancy price. The interest manifested in it, culminated in a scientific investigation, and analysis being made by Prof. John Uri Lloyd, of Cincinnati, whose report was read at a joint meeting of the Cincinnati Chemical Society, and the Cincinnati Academy of Pharmacy, from which his deduction is quoted: "To sum up, 'Husa' is a liquid containing large amounts of morphine sulphate, some salicylic acid, some alcohol, water, glycerine and coloring matter, probably burnt sugar. I would define 'Husa' as follows—A solution of morphine to be administered under the name of 'Husa,' and only by physicians. It is sold to physicians at the rate of ten dollars for about two hundred and thirty-four grains of morphine. Until I am furnished with a new plant, containing morphine to the extent found in these experiments, I shall accept that 'Husa' is a concoction." The medical profession has been imposed upon so much, that it is well to investigate closely all "new and startling discoveries" before investing anything in them.

THE IDEAL HERNIA CURE.

This treatment is at present being advertised in several medical journals, the formula being a secret one. Physicians desiring knowledge of the secret are obliged to send ten dollars to the Ideal Chemical Co. of St. Paul, and in return receive a small folder containing the formula and directions for its use, together with a hypodermatic syringe.

The following extract from their pamphlet, kindly loaned to me by one who purchased it from the above firm, gives all the leading points of the treatment. It will be noticed by all who are even only fairly informed on this subject, that nothing new is offered. True, the formula

may differ from others, yet there are hundreds of compounds that will cure hernia if properly injected.

I have investigated many of the secret methods advertised to physicians and it is indeed seldom that anything is offered that is new or original, or of any more advantage to the physician than formulae and methods which are published in practical medical journals and books on the subjects.

Details of Treatment. The day previous to the operation, administer a large dose of sulphate of magnesia, to thoroughly clean the intestinal tube. Everything being favorable, place the patient in bed, having the head and shoulders low, and the pelvis slightly raised. Explore the inguinal canal and rings thoroughly and see that the hernia is completely reduced. Now invaginate the scrotum with the forefinger of the left hand and locate the external ring, then with the thumb of the same hand press from above downward on the integument directly over the external ring. The integument and tissues being firmly held between the forefinger and thumb, the needle is pressed down beside the thumb until the point reaches just below and under the arch of the external ring. The instrument is now lowered and the point slipped under the arch of the external ring and passed up the canal in the sub serous areolar tissue until it reaches the internal ring. The fluid is then slowly distributed over the interior of the canal and around the margins of the ring as the instrument is withdrawn.

A compress is now applied over the side of the hernia and a figure 8 bandage applied around the body and thigh of the affected side, enjoining positive rest for two days. From five to fifteen drops of the solution should be injected at each treatment, and should be repeated once a week until assured of the proper formation of plastic material to warrant a permanent cure. The truss commonly used may be worn during the interim. It is seldom necessary to give more than six treatments to secure satisfactory results, and in cases of children one or two treatments may be sufficient.

The formula is:

Glycerole of Tannic Acid grs. xc.

Glycerine fl. 3 j.

Mix.

Of this solution take two drachms, and add Alcohol, one drachm, and Tr. Cantharides, one drachm. Mix all and shake thoroughly.

Note. There is no official preparation known as Glycerole of Tannic Acid, but the composition of Glycerite of Tannic Acid is approximately 90 grs. to the ounce of glycerine. The formula is obscure as written and appears to be another example of non secrecy combined with impossibility.—J. D. A.

EXCELSIOR HERNIA FLUID.

The following is the formula of the Excelsior fluid for the treatment of hernia. It was formerly sold as a secret formula, but like many others, was disclosed and given to the profession.

I have not used this compound but would not hesitate to do so. From its composition it evidently possesses merit.

℞ Sulphate of Zinc gr. x.

Carbolic Acid ℥ vj.

Guaiacol ℥ xv.

Lloyd's Spec. Tr. Thuja 3 j.

Fld. Ext. White Oak 3 ij.

Oil of Cinnamon ℥ ij.

Glycerine 3 ij.

Water q. s. ad. 3 j.

Mix.

Dissolve the sulphate of zinc in the water, add the glycerine, carbolic acid, oil of cinnamon and guaiacol. Mix thoroughly and add the remaining ingredients. Let stand for a week, with frequent agitation, after which filter through paper.

DR. COFFEY'S SYSTEM OF TREATING RECTAL DISEASES.

The following set of formulae was kindly furnished me by a physician located in the middle West, who informs me that this secret system was sold throughout his section at prices varying from \$350 to \$1200, under an agreement of secrecy.

As quite a number of physicians have made inquiry regarding this treatment, I am pleased to be able to furnish the information desired.

Hemorrhoidal Fluid.

R Campho-Phenique	3 vj.
Naphthalin	3 j.
Morphia Sulph.	gr. x.
Pulv. Hydrastis	gr. xl.
Acid Carbolic	3 iv.

Mix. Let stand ten days, then filter.

Sig. Inject four to six minims, according to size of hemorrhoid.

For Healing Ulcers and Fistulae.

R Gum Camphor	gr. xx.
Morphia Sulph.	gr. xx.
Naphthalin	gr. xx.
Pulv. Hydrastis	gr. xl.
Acid Carbolic	3 iv.
Vaseline	3 ij.

Mix. Make an ointment.

Note. (Carbolic acid cannot be incorporated with vaseline in this proportion so as to remain in permanent subdivision, but separation, due to crystalization, will take place. Adeps lanum, fresh lard or suet should be substituted for the vaseline.—J. D. A.)

For Healing After Piles Have Sloughed Off.

℞ Linseed oil,
Sweet oil,
Rosin,
Mutton Tallow.....āā ʒ iv.
Yellow Wax..... ʒ iiij.

Mix by melting all together and strain through a thin cloth, and stir until cool.

For "Ease" when piles are painful, Cocaine, two grains to the ounce of vaseline, is recommended.

For Hemorrhage, the use of Monsell's Solution is advised.

After injection of piles the tumors are painted with a solution composed of eight grains of morphine, and one ounce each of Tr. Opii and Olive oil.

THE SLANDAIS PILE TREATMENT.

Sold to the profession some years ago under an agreement of secrecy. First,

℞ English Rosin..... i lb.
Creolin,
Oil Gaultheria.....āā fl. ʒ iv.

Melt together and when cooling divide into blocks half the size of a hen's egg.

Second. Add a tablespoonful of Sodium Biborate and a teaspoonful of Carbolic Acid to three pints of water. Use hot and bathe the pile tumors for ten minutes.

Third. After bathing the piles place a shovel full of wood ashes into a chamber, also one block of the first named remedy, and place a live coal against it. While it burns have the patient sit on the chamber and allow the smoke to come in direct contact with the piles. The medicinal properties are conveyed in the smoke. Repeat four or five times in twenty-four hours, until cured. After bathing, dry the piles before taking the smoke treatment.

THE BRINKERHOFF SYSTEM.

FOR PILES AND OTHER RECTAL DISEASES.

HEMORRHOIDAL FLUID.

This secret formula is frequently seen reported to be one ounce of carbolic acid, eight grains of chloride of zinc and five ounces of olive oil. Any one who has seen the compound as prepared by its manufacturers, who still supply it, knows that this is not the correct formula. By tests the percentage of carbolic acid is evidently much larger, and the oil used is undoubtedly sperm oil.

I obtained some of this fluid indirectly, several years ago, and I noticed that it was slightly colored with permanganate of potassium. On standing for some time this color fades, due to the oxidization which takes place. Judging from its action when injected, and its action on mucous membrane generally, it is probably a fifty to sixty-five per cent solution of carbolic acid in sperm oil. The elder Brinkerhoff had a formula patented which he claimed was that of his pile injection, but this is a most glaring deception. The following was taken from the records of the patent office in Washington:

"Take a quantity of sperm oil, place it in a dish at a temperature of twenty-four degrees F., and add strong carbolic acid to the oil until white feathery crystals begin to form, stirring all the while."

The impossibilities in these directions appear in every line.

Sperm oil at twenty-four degrees F. is a solid body, almost as hard as a stone, as is also pure carbolic acid.

If an acid were used in which a sufficient quantity of water or glycerine was present to keep it liquid, it would not mix with sperm oil at any temperature. The intent to deceive is therefore apparent.

The following is his treatment for Fistula :

℞ Dist. Ext. Hamamelis..... fl. ʒ v.
 Liq. Ferri Subsulph..... fl. ʒ j.
 Acid Carbolic, Cryst..... gr. ij.
 Glycerine fl. ʒ ij.

Mix. For Fistula in ano inject ten to fifteen drops deep into the fistula, and press the track of the fistula with the finger to force the fluid in more deeply.

In cases of Rectal Ulcer he gives the following treatment: To an ounce and a half of water add half a teaspoonful of starch and half a teaspoonful of the formula above given, and inject into the rectum every night. Sometimes he orders an injection of starch into the rectum in the morning after the bowels have moved.

His system, as applied to Fissure of the Anus, is this: Once or twice a month the ulcer is cleaned and a solution of nitrate of silver, 40 grains to the ounce, is applied to it. Between these treatments the patient uses a morning and evening treatment himself. Each morning he is to evacuate the bowels, then inject into the rectum luke warm water, and afterwards insert a little ointment consisting of three grains of carbolic acid and eight grains of sulphur to the ounce of vaseline or lard. For evening treatment he uses the ulcer treatment, in the manner above given under Rectal Ulcer.

Alternating with the above treatment for Fissure, he applies the following "Fissure Compound":

℞ Ac. Carbolic ʒ iv.
 Oil Sweet Almonds ʒ ij.

Mix.

Sig. Apply with cotton tipped probe, lightly along the track of the fissure.

DR. ARMSTRONG'S "VRIL."

Also Known as Po-pi-na, Mastico, Golden Manna, and The Great Cell Irritant.

The formula of this preparation is as follows, obtained from the originator. It has been advertised for several years in a number of medical journals, and is furnished on receipt of two dollars. In his advertisements, Dr. Armstrong makes some astonishing statements, and repeats them without reserve in his letters to inquirers.

℞ Coarse Wheat Bran, browned..... O j.
Soluble Citrate of Iron..... ʒ iiij.
Sugar, granulated..... ʒ ij-iiij.

Mix. Sig. One heaping teaspoonful morning, noon and night. Best taken in milk or cream, q. s.

If patient is under forty-five years old and not very feeble, give one and one-half teaspoonful doses.

The bran is to be browned in an oven same as coffee. It must be moderately coarse. The coarse particles are best obtained by sieving the fine particles out and using what remains.

When extra cell irritation is desired, instead of the citrate of iron, citrate of iron and ammonia may be used in same quantity. The preparation is also made in the form of small blocks, of which the following is the formula :

℞ Gum Tragacanth ʒ j.
Citrate of iron and Ammon,
Tannin āā ʒ iiij.
Light Brown Sugar..... ʒ xij.
Oil of Orange..... fl. ʒ ss.
Coarse Wheat Bran, browned..... O v.
Alcohol O j
Water q. s.

Place the Gum tragacanth in sufficient water to dissolve

it so as to make the solution of the consistency of cream. Add the iron and tannin to this and mix. Knead the bran into this and make a mass, adding the alcohol in which the oil of orange has been dissolved, with the sugar and sufficient water to make a mass the consistence of dough. Roll out the mass to the thickness of 1-4 to 1-3 inch and cut into blocks one inch square. Dust with powdered sugar and box. Dose, one to two. The bran must not be used fine, nor made fine during manipulation.

Quoting from a letter written to me, the doctor says:

"I enclose the formula which I used for many years. I put it up in paper boxes, mahogany colored, with gilt letters, as a great cure for consumption and all chronic diseases. I always give other remedies with it but only for appearance, as this formula does all the work. It irritates the great lining of the alimentary canal. I have cured many bed-fast, hopeless cases of consumption, too feeble to rise up in bed, wasted to the greatest extreme, hectic, etc. In many cases they would get out of bed in three to five days and walk about the house and were cured in two or three months. It loosens cough and rapidly builds up. The feebler the patient, the more marked and rapid the gain. It does not cure all cases of consumption, but vastly more than all things known to science, so also with women and children and all conditions of debility. I have known it to cure a woman of cancer of the breast in twenty days. It was an open, discharging, painful cancer. A young woman with consumption had not raised her head from the pillow for months, and had taken but three tablespoonfuls of food in four days previous to taking this cell irritant, and in seven days after beginning it, she went out riding and ate three fair meals a day. In convalescence, after fevers or child-birth, where the patient is low, with dry and black tongue, it is grand. No matter what the disease, unless flux or cancer of the stomach, instead of drugs which often kill, give this and in most cases it will put them on their feet in a few days. There is too much calomel and opium given

in states of low vitality; they destroy what little vitality remains. Instead, this gives prodigious vigor so quickly.

"In many diseases apparently beyond the reach of human skill, when all hope is gone, if the patient can swallow, give this remedy and you will be astonished and delighted and save many lives. In consumption, if the cough does not yield to this remedy, give one drop of peppermint oil on sugar, three times daily, before meals. In all cases except consumption, use alternate extension and flexion of all the muscles, ten minutes each day."

I have not used this compound, nor do I credit the statements made in its favor. It is given here as a striking example of the extraordinary claims that can be made for a common remedy for the purpose of exciting interest and promoting its sale.

A large illustrated circular, the size of a small newspaper, accompanied these formulae, and contained many beneficial results follow its use, I would be pleased to hear of them.—J. D. A.

GENITO - URINARY SPECIALTIES.

CONTRIBUTED BY T. W. WILLIAMS, M. D.,
MILWAUKEE, WIS.

NON SURGICAL TREATMENT OF THE PROSTATE.

Affections of the prostate are more common than is generally supposed. I have frequently been consulted by patients for supposed stricture, bladder or kidney troubles which upon examination proved to be enlargement of the prostate. In his "Clinical Lectures on Diseases of the Urinary and Generative Organs," Sir Henry Thompson asserts that a digital examination of men over fifty-five will disclose the fact that at least one-third have more or less enlargement of the prostate. It is, in fact, a disease almost peculiar to middle and advanced life.

The points of special clinical importance in reference to the anatomy of the prostate are, that when the fore finger is introduced well up into the rectum the healthy prostate is felt in the median anterior line as a body about one and a half inches long and nearly as broad, lying about an inch and a half beyond the internal sphincter ani. The vesiculæ seminales lie beyond it, with the vasa efferentia opening into that portion of the urethra surrounded by it. In all chronic urinary troubles the practitioner should not fail to make a digital examination of the prostate, as it will often yield valuable diagnostic indications.

The two principal factors in the production of prostatic diseases are previous gonorrhoea and sexual abuse. What Hufeland terms "moral onanism," or that continued state of erethysm of the sexual system produced by the mind

dwelling upon lewd objects,—frequently prolonged excitement of the organs without physiological gratification,—in fact any cause inducing congestion or plethora of the gland, lays the foundation for future chronic enlargement. Gonorrheal inflammation affects the prostate in much the same way that it does the testicle, but much more frequently, although seldom recognized on account of its location. Consequently those who have been much addicted to venereal indulgence in their younger days, become the victims of prostatic disease in later life. The hypertrophy may be either acute or chronic. The acute form is usually a result of extension of the urethral inflammation of gonorrhea and need not engage our attention for the purpose of this essay. Chronic enlargement may be due to a simple increase in the size of the gland, from previous inflammation, or congestion from erotic excitement; or it may, and frequently does, arise from scrofulous calcareous, or tubercular deposits in its substance; and finally it may be due simply to growth from increased nutrition following an increased blood supply, accompanied by narrowing of the return veins. After death, in this latter form, an enlargement of the blood vessels similar to that in abnormal growths, has been observed. We are usually able, by careful investigation, to diagnose the particular form of enlargement with which we have to deal.

The degree of trouble arising from enlarged prostate depends upon its character. The lateral lobes may be greatly enlarged without producing much inconvenience; but even a very slight enlargement of the median lobe, forming as it does the floor of the prostatic portion of the urethra, will produce more or less urinary troubles. I have sometimes found an enormous enlargement of the lateral lobes in patients who had experienced hardly any symptoms referable to the prostate; but on the other hand I have frequently had patients who had become regular "urinary cranks," in whom the enlargement of the median lobe could scarcely be detected by the most careful digital examination. The reason is that the slightest elevation of the floor of the prostate acts

as a dam to hold the water back, necessitating stronger expulsive efforts, and eventually more or less vesical tenesmus.

Most of the evils resulting from hypertrophy, as Dr. Godlee has pointed out, "depend upon the fact that the bladder is never emptied; it is essential, therefore, that the patient's power in this respect should be ascertained without delay by catheterization, and if it be discovered that a certain amount of residual urine remains, he should be taught to pass the instrument himself, and directed to do so once a day. Secondly, cystitis has often been caused by setting up putrefaction of the urine." Urinary retention is very apt to produce cystitis, not only on account of decomposition of the urine, but from infection conveyed into the bladder by catheterization. The odor of the urine in chronic prostatic disease is quite characteristic, on account of ammoniacal decomposition.

The prominent symptoms are: Difficulty in emptying the bladder, the urine escaping in driblets; a frequent desire to pass water, especially nights and mornings; the character of the urine is usually unchanged, and there may be some slight pain before passing it, but usually none afterwards. These are the premonitory signs of hypertrophy; later, the patient finds it difficult to hold water; the desire to pass it is imperative, and must be immediately attended to. It is no unusual mistake for physicians whose attention has not been particularly called to the subject to ascribe these symptoms to bladder or kidney troubles and prescribe accordingly.

Chronic Prostatitis is one of the most frequent causes of sexual and urinary troubles in men of all ages, particularly between twenty-five and forty-five. Its symptoms resemble those of stone in the bladder. These are: A frequent desire to urinate, a feeling of weight and heat in the perineum, and a pain extending the whole length of the passage. At times a few drops of blood will follow the water, or the water will be bloody from rupture of the peripheral vessels, and generally the patient suffers from frequent nocturnal emissions.

The urine is cloudy, and deposits a muco-purulent mass after standing awhile. It is frequently met with as a sequel of gleet which has extended to the prostatic portion. There is also more or less complaint in regard to the urine, which feels hot, with a slight smarting or stinging sensation after passing; and there is often a feeling as if the bladder was not entirely evacuated, which is true, as a very slight enlargement of the floor or middle portion of the gland, as previously remarked, interferes with the complete emptying of the bladder, and causes the last drop to dribble away after the stream of urine has ceased.

Hyperaesthesia of the Prostate is a condition frequently encountered among young and middle aged men. Its principal symptom is the oozing out of a thin transparent mucus, resembling the white of an egg, sufficient to keep the meatus moist and sticky. In traveling over the alkali plains some years ago, I noticed that all the mares in the party suffered from a similar discharge from drinking the alkaline waters, and plains-men informed me that as a result of the continual "spewing," they became weak and emaciated. The glairy, mucous secretion that oozes out as a result of sexual desire in both sexes, seems to be of the same character—a product of the glands of Bartholine in the female, of the prostate in men—seemingly a provision of nature for "oiling up the machinery" preparatory to the first act in the transmission of life. The discharge itself is quite innocent in character, being simply an increased secretion of the gland; but it is usually very annoying, and alarms the patient who mistakes it for seminal fluid. A peculiarity of prostatorrhœa, as the trouble is usually called, is that on straining at stool, large quantities of this discharge will escape, amounting sometimes to a tablespoonful or more. After prolonged ungratified sexual excitement, to which the trouble is almost wholly due, it will mingle with the urine, sometimes to such an extent as to give it a milky appearance. Such symptoms are very alarming to the laity as a rule, and render them an easy prey for the

quack, who has no difficulty, usually, in convincing his victim that he is suffering from a bad case of spermatorrhea; and still less in speedily relieving him of it by the use of the following injection, two or three times a day:

℞ Zinc sulphate..... gr. xv.
 Morphine sulphate gr. ij.
 Rose Water..... fl. $\bar{3}$ vj.

A small quantity of this solution, about a drachm, is to be injected twice a day by the physician, with a small hard rubber syringe having a silver nozzle long enough to reach the prostate, drop by drop, the process taking about five minutes. Or the bulb catheter syringe, described further on, may be used.

Prostatorrhea, not being a germ disease, yields readily to mild astringent washes, like the above, followed by a urethral crayon of similar composition, with the addition of hydrastis, once a day until the cure is complete. Give five grains mono-bromid of camphor three times a day as an autaphrodisiac.

Excellent results are obtained in prostatorrhea from local applications of argyrol ointment, 30 grains to the ounce, made with Williams' Urethral Applicateur, elsewhere described.

Acute Congestion of the Prostate is an alarming accident of hypertrophy to which sufferers with the latter affection are subject as the result of indiscretions in diet, drinking, exposure to cold, or other apparently trivial causes. Its symptoms are: sudden and complete retention of urine, accompanied by bloody urine. An increased temperature, quick pulse, and more or less pain and uneasiness in the region of the bladder. If the urine is not speedily evacuated through the catheter, putrefaction ensues, the tongue becomes dry and covered with a brown coat, the pulse becomes faster and weaker, and the patient sinks into a typhoid condition, which may end fatally. Old men are more liable to these attacks than young men.

The treatment of such cases is conducted upon general principles. A brisk saline cathartic should be administered at once, (a teaspoonful each of Epsom and Glauber salts dissolved in a glass of warm water is best), and a hypodermic injection of $\frac{1}{4}$ grain sulph. morphia, repeated if necessary in half an hour, administered. Internally I give $\frac{1}{4}$ grain solid extract hyoscyamus, which has a special action on the neck of the bladder, or its equivalent of the fluid extract, or alkaloid, hyoscyamine, every hour until the patient is brought under the influence of the combined opiates, greatly facilitating the introduction of the soft catheter. It is of the utmost importance to prevent decomposition of the urine as the chief danger of congestion is due to this cause. For this purpose, the urine must be evacuated and the bladder washed out with an antiseptic alkaline solution. The following answers the purpose admirably:

R	Sodium Carb.....	5 ij.
	Acid Boracic.....	5 j.
	Sodium Chorid.....	3 ij.
	Aqua	O ij.
M.	Filter.	

SPECIFIC TREATMENT. In the treatment of diseases of the prostate gland, I have obtained the most satisfactory results from the local application of medicaments directly to the prostatic portion of the urethra. Practical experience has demonstrated that the use of escharotics for this purpose should be discouraged on account of their liability to leave hardened cicatrices, which interfere with the normal functions of the organs. The local treatment consists of alterative and antiphlogistic applications directly to the prostate by means of the Urethral Applicateur hereafter described, once or twice a week, followed during the intervals by the specific local and internal treatment, to be described presently. As an antiphlogistic alterative application, I have found nothing superior to the combination of Ung: hydrarg.

per nit. and cocaine. It is prepared by rubbing up ten grains of cocaine with four ounces of the mercurial preparation.

I have used this preparation in my special practice for a number of years with the most gratifying results. I employ the Urethral Applicateur, charging the reservoir with the particular ointment decided on for the case. [See note at the end of this article].

Passing the instrument down to the prostatic portion of the urethra, the ointment is deposited by a turn of the screw plunger. I then withdraw the instrument, and the patient goes about his business, as the operation causes no suffering, and only a slight smarting, which passes off in a few minutes. I repeat these operations about once a week, sometimes twice, and it is seldom necessary to continue them longer than from six to twelve weeks. The effect is not only gratifying, but immediate. Patient and physician are not discouraged by waiting too long for tangible results. I have often had patients apply for treatment who had been under the care of physicians of unquestionable skill for months without appreciable benefit. In nearly all there was more or less trouble of one kind or another with the urine. Yet frequently a single application to the prostate has made a marked change in lessening the urinary trouble, and checking seminal emissions.

I follow the mercurial application in twenty-four or thirty-six hours, with a local application of a fresh solution of the adrenals of the sheep, (suprarenal capsules), every other day, applying it with a catheter syringe, and also administer a five grain tablet of desiccated suprarenals three or four times a day, alternating it in most cases with a five grain tablet of desiccated prostate gland, or thyreoid, if of strumous origin, as explained later on. In using the adrenal solution, all that is necessary is a urethral syringe, with a silver nozzle of sufficient length to reach the bladder; an ordinary soft catheter with a bulb attached, like that of a "dropper," but larger, answers every purpose. Such a syringe is easily extemporized by cutting off half the nozzle

of a soft rubber ear syringe, inserting a piece of glass tube and passing over this a soft catheter, about six inches long.

The catheter is carried down until it enters the bladder, and then is withdrawn until its point lies midway the prostatic portion of the urethra, and the solution, to the extent of from thirty drops to a drachm, is pressed out into the canal drop by drop, allowing time for complete saturation of the canal, or from ten to fifteen minutes. This briefly outlines the specific treatment, which will afford speedy and permanent relief in the large majority of all cases of genuine prostatic diseases, whether the symptoms are due to hypertrophy, acute or chronic inflammation; otherwise the case is handled on general principles, according to the indications present, stimulating the liver, if inactive, and keeping the bowels open at the same time with a teaspoonful of sodium phosphate dissolved in a half pint or more of warm water every night on retiring, and looking after the digestive organs if impaired. No other laxative meets these indications in prostatic diseases quite as well as the phosphate of soda.

In conjunction with the general course of treatment outlined above, I prescribe in most cases, rectal suppositories and urethral crayons composed of one ounce each of Europhen, Aristol and Sulphonal to 28 ounces of cocoa butter, with 2 ounces beeswax to give the requisite degree of firmness, moulded into 35 grain rectal cones and 15 grain crayons. A crayon and a suppository are used alternately every twelve hours, and give us the specific alterative effects of these drugs on the enlarged gland, combined with an analgesic effect without the disadvantages attendant upon the local application of the original preparations of iodoform and iodine.

R Cocoa Butter (Huyler's)..... ̄ xxviij.
 Bee's Wax, white..... ̄ ij.
 Europhen.
 Aristol,
 Sulphonalâ ̄ j.

Melt the cocoa butter in a water bath with the wax; stir in the eucophen, aristol and sulphonal; stir until it cools down to a point at which it begins to thicken but still runs freely, and pour into suppository moulds of sufficient size to form thirty-five to forty grain suppositories, and set on ice to cool. When removed from the moulds, they are dusted with lycopodium and each one is wrapped in waxed paper. Keep in a cool place as they melt at body temperature.

The urethral crayons are moulded from the same mass, with the addition of one-half ounce hydrastine hydrochlorate (Merck) to the above quantity. The crayon moulds are bored out so as to form crayons about three inches long, three-sixteenths of an inch in diameter at the large end, tapering to a point. The materials entering into them render these suppositories and crayons quite expensive, but they are indispensable in the specific treatment of prostatic diseases.

The solution of the suprarenals of the sheep is prepared by macerating six grains of the powdered desiccated gland in a teaspoonful of distilled water for two minutes, and straining. It should be prepared fresh for each case and used immediately, as it deteriorates rapidly. When properly prepared its immediate effect is to blanch red and inflamed mucous membranes in one minute, as may be witnessed in its application to the eye in conjunctivitis. Applied every other day to the prostate gland, in conjunction with the other treatment given, the entire gland eventually shrinks, contracts and shrivels up, with a marked amelioration of all the symptoms.

In all chronic cases of prostatic disease, the mucous membrane of the bladder is in a condition of sub-acute inflammation, with more or less urinary derangement, alkaline or ammoniacal urine, etc. Diuretic treatment is very important in such cases, not only on account of the urinary trouble, but to keep the urine in an aseptic condition. Diuretic preparations with a special tendency to the bladder should be used. For this purpose I employ the following

tablet, which can be prepared as a special formula by any of the manufacturing pharmacists. I may add that it is one of the best all around "Kidney Pills" extant.

℞ Buchu,
 Para-Formaldehyde,
 Potassium Nitrate,
 Triticum Repens..... āā gr. j.
 Tr. Digitalis..... ℥ j.
 Oil Juniper..... ℥ ss.

Mix. Ft. one coated tablet or pill.

Sig. One or two according to the exigencies of the case, to be taken every four or six hours, with a glass of water.

RECAPITULATION.

After the diagnosis of the case is established, the bladder having been evacuated and washed out if necessary, apply the per nitrate ointment (Ung. Hydrarg. Nitratis, or Citrine Oint. U. S. P.) at once and commence the internal treatment. Direct the patient to commence immediately with the rectal suppositories, using one by the bowel every night at bedtime. The third day after the operation, he is to use in addition, at bedtime, a urethral crayon, repeating it every other night. Put him on the kidney pills at once and direct him to use one of the adrenal, or one of the prostatic tablets, between the times of taking the kidney pills, alternating them, taking a prostatic tablet one time and an adrenal the next. He should call the next day after the application of the per nitrate ointment, for an application of the solution of the suprarenals, and every other day thereafter. Once a week will be often enough for the per nitrate applications.

If you have reasons to suspect that the hypertrophy is of strumous origin, or that state of heredity predisposing to goitre, enlarged glands of the neck, etc., substitute five grain tablets of the thyreoid extract from the sheep, for the desiccated prostate gland extract. It is your sheet anchor

in such cases, but quite useless in prostatic enlargements from any other cause. All of the animal extracts used are from the Armour laboratories.

This is the regular routine treatment, but the experienced physician, taking it as a basis, will no doubt be able to modify and vary it, according to the necessities and circumstances of each individual case. Specific instructions to cover all possible points that may arise in practice would swell this article to the proportion of a large volume.

This article does not include the surgical treatment of the prostate gland, which should be a *dernier ressort*. After all other means have failed, life may be prolonged in comparative comfort, even in men between sixty and seventy, by extirpation of the gland.

This operation has been carried to such perfection in late years, as to involve comparatively little danger of life. I very much prefer the perineal route, as practiced by Dr. Alexander, of New York, to the English supra-pubic operation.

NOTE.—In my article published in the second edition of this work I advised the use of the Lallemande porte caustique for making local applications to the prostate, but since then I have perfected the urethral applicateur, which is much to be preferred, and which is fully described in the following chapter on, "A New Method of Treating Disease of the Male Urethra."

A NEW METHOD OF TREATING DISEASE OF THE MALE URETHRA.

The paucity of suitable surgical appliances for treating the male urethra has always been an obstacle to the advance of genito-urinary surgery. Since Lallemande's *port caustique* was brought to the attention of the profession in 1836, there has been little substantial improvement along this line.

Lallemande's instrument consists of a catheter-like canula, provided with a caustic carrier as its name implies, in which was an elongated depression, or cup which could be drawn into the canula covering, during its introduction, and projected when the portion of the urethra was reached which was to be operated on, and turned around once or twice, so as to bring the caustic in contact with all parts of the membrane. The cup was first filled with crystals of silver nitrate and held over a spirit lamp until they were fused into a solid mass.

With this caustic-carrier, Lallemande cauterized the caput gallinaginis about once a week, and claimed for it the most brilliant results in spermatorrhea and impotence. Subsequently his instrument was adopted for other cauterant applications to the deep urethra and prostate gland. A certain amount of tactile dexterity, acquired only by practice, is required to handle the instrument successfully, and even when this is acquired, it is rather difficult to limit the cauterant action at will.

Other operators have failed to secure the wonderful results obtained by Lallemande with his method, which is possibly due to the fact that he, as the inventor of the method, was an enthusiast unable to analyze results with impartiality. Being also the only physician of renown in his time who made a specialty of sexual weakness, as a natural consequence, as Dr. Vecki remarks, people of the wealthy

class afflicted or imagining themselves afflicted with sexual debility, flocked to him from far and near; and as the larger proportion of those seeking medical advice for functional forms of this ailment are psychically impotent, it is possible that Lallemande's fame, combined with the great renown of his method, exerted a greater curative influence upon these neurasthenics than his *porte caustique*.

The slow and painstaking physicians of Germany, disappointed in being unable to secure Lallemande's brilliant results, rejected his method entirely; nevertheless, most genito-urinary surgeons admit the value of cauterization in spermatorrhea and impotence due to organic changes in the prostatic urethra, although we now possess a better instrument than the *porte caustique*, in Williams' Urethral Applicateur, and a superior agent to lunar caustic, in argyrol and nitrate of mercury. Cauterization by Lallemande's method, especially if unskillfully performed, was frequently followed by dysuria and bloody urine for two or three days, and sometimes the inflammation was so intense as to render ice bags to the perineum, dieting, bathing and a regular antiphlogistic regimen necessary. With the pernitrate of mercury ointment, as herein recommended, the pain is slight, lasting only a few minutes, and there is no dysuria after the first passage of water; while an application of even a strong ointment of the silver preparation known as argyrol, is absolutely painless.

One serious objection to the application of solid silver nitrate to the ejaculatory ducts and colliculus seminalis, is its tendency to form chemical combinations with the tissues, and unless great care is exercised, it is liable to make too deep a burn, which results in the formation of cicatricial tissue. This accident produces a patulous condition of the ducts, aggravating rather than removing spermatorrhoea.

I have met with very few cases in which protargol, or some of the other silver preparations, or the ointment of pernitrate of mercury, U. S. P., has not given equally good.

if not better results than nitrate of silver, without its disadvantages.

I attribute this to the fact that the oleaginous nature of the preparation limits its caustic action to the surface of the tissues, which are usually, as shown by the endoscope, in a hyperaemic, swollen or granular condition. By thus acting upon the surface of the engorged tissue, its morbid irritability is changed, and a healthy contraction excited in it which causes it to empty itself, become paler, and retain a tonic, energetic action until its normal condition is restored by subsequent soothing, healing and astringent applications.

I employ it almost exclusively in operations on the deep urethra.

The latest of these silver preparations, argyrol, containing 30 % of silver, bids fair to supersede all the others. A 10 % ointment of this preparation may be substituted for the pernitrate of mercury ointment. Prepare as follows:

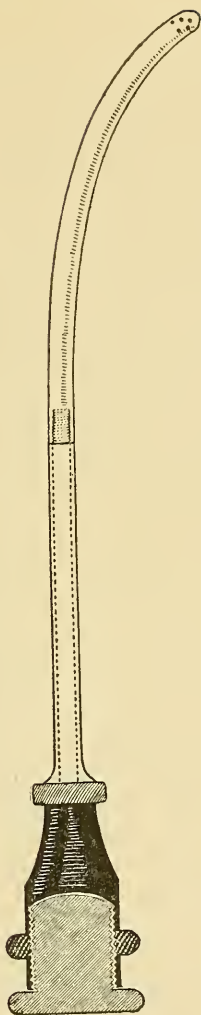
℞ Argyrol grs. xlviiij.
 Lanum ʒ vj.
 Olive Oil..... ʒ ij.
 Mix. Ft. Unguent.

I commenced using the pernitrate as a local antiphlogistic and cauterant about 1882. [See the *Therapeutic Gazette*, June, 1885]. At that time and until recently I used Lallemande's porte caustique for making the application, by filling the cap with the ointment instead of with fused silver nitrate. The principal objection to the porte caustique for this purpose is that it does not hold a sufficient quantity of the ointment for the various purposes of such an instrument.

More recently, however, I devised a URETHRAL APPLICATEUR, which I have not only found very much better for this purpose, but also for treating disease of the urethra generally, enabling us to make any kind of medicinal application to that canal as readily as if it were an external membrane.

DR. T. W. WILLIAMS' URETHRAL APPLICATEUR.

The latest instrument devised for local medication of any portion of the male urethra.



The instrument is represented by the subjoined cut. It consists of a silver or heavily plated catheter-stem, about seven inches long, closed at the distal extremity, and perforated with 1-32 holes, which screws into a hard-rubber reservoir, or cup to contain the medicament. A hard-rubber

plunger screws into the top of the reservoir and forces the ointment through the catheter. It is introduced into the urethra as far back as the neck of the bladder, so as to cover the prostatic, or deep urethra and *colliculus seminalis*. While steadying the instrument with the thumb and forefinger of the left hand on the projecting rim of the reservoir, the physician by making a turn of the screw plunger, causes the extrusion of the medicament. The instrument is turned around in the canal once or twice to spread the ointment before withdrawing the catheter.

Cauterant, antiphlogistic, analgesic and astringent applications in the form of ointments, are readily applied to the *colliculus seminalis* and deep urethra, in chronic urethritis, stricture, gleet, spermatorrhea, premature *emissio seminis in coitus*, dribbling of urine from loss of contractility of the canal, prostatitis, etc. For cauterizing the ejaculatory ducts and *caput gallinaginis*, it is preferable to Lallemande's porte caustique. Acute gonorrhoea and non-specific urethritis can be most effectually treated by first deadening the sensitiveness of the canal by injecting a few drops of a one or two per cent. solution of Beta-eucaine or cocaine, then passing the catheter stem, anointed with carbolized sweet oil, down to the prostate, and extruding the medicament as the instrument is slowly withdrawn, thus spreading it over the entire urethral surface. This not only brings it in contact with every part of the affected membrane, for a longer time than injections, but keeps the inflamed, granulated, mattering surfaces separated,—a sine qua non in facilitating the healing process.

The Applicateur gives much better results in urethral disease than injections or crayons. With it we can accomplish more in chronic cases in three or four weeks, than we can by the ordinary methods in vogue in as many months. It affords a wide choice of remedial agents. There is scarcely any cauterant, antiphlogistic, analgesic, astringent, stimulant or healing application that we cannot administer to the urethra as readily as if it were situated externally. Ung.

hydrarg. nitrat., (preferable as a cauterant to nitrate silver), Ung. hydrarg., oxide of zinc, subnitrate of bismuth, bole Armenian (supposed to be the basis of "Injection Brou," and to act by depositing an astringent earthy sediment on the canal which keeps its folds separated), hydrastis, cocaine, morphia, sulphate of zinc, adrenalin chloride, (1-1000) aristol, iodoform, iodine, salol, ichthyol, protargol,—in fact any and all of the ingredients usually employed in the numerous urethral crayons on the market, can be more effectually and safely applied with this instrument in the form of ointments, using lanum (Merck) and olive oil, $\frac{3}{4}$ of the former to $\frac{1}{4}$ of the latter, as a vehicle, the adhesiveness of which retains the remedy in direct contact with the diseased membrane for a long time, during which the latter is separated and distended, affording the best opportunity for the exercise of its gonococicide properties.

In the treatment of Stricture of the Urethra, also, the Applicateur furnishes a valuable addition to the genito-urinary surgeon's armenarium. I have observed that if the applications of the Ung. hydrarg. pernit. are repeated every other day for a while, the patient begins to pass numerous shreds in the urine, caused by the deadening and peeling off of the epithelial layer of the mucous membrane. In a few instances complete casts of the prostatic urethra have been "shed" in this way, much to the alarm of the patient. Thus it is possible with this instrument to repair a diseased urethra by giving it a *new lining*, as it were, and to enlarge the calibre of a strictured portion, not only by the absorption of the layer of organized lymph deposited beneath its surface, but also by repeatedly reaming out the passage, so to speak, by causing the disorganization of one almost imperceptible layer of tissue after another. In none of my cases, so far, have I observed the least untoward result from this process.

By turning the Applicateur around once or twice, and giving the screw plunger a backward turn, the little ointment remaining on the tube will never noticeably affect the anterior passage.

Lavage of the urethra with water as hot as it can be borne, impregnated with some mild antiseptic, before using the Applicateur, is good practice, especially in acute cases. The deeper creases and mucous cavities are thus thoroughly cleansed and the ointment has a more direct action. The catheter stem of the Applicateur, attached to a rubber bulb, makes a good syringe for urethral lavage. Fill the bulb, pass the stem down to the neck of the bladder, and slowly inject the water which wells up around the stem and flows out at the meatus. Repeat the operation several times. Avoid injecting the bladder, but should some of the fluid enter it, it will do no particular harm; there is, however, no danger of this, unless the stem is carried too deep.

I will add a few approved formulae of the different ointments which I have found best adapted for the purposes indicated.

FORMULAE.

- No. 1. R Ung. hydrarg. nitrat. U. S. P. . ʒ j.
Cocaine,
Morphia sulph.ãã gr. ij.

Mix and rub together thoroughly in a glass mortar. Preferable to nitrate silver as a cauterant of the ejaculatory ducts and *colliculus seminalis* in spermatorrhea, impotence and chronic urethritis, with premature emission in coitus, dribbling of urine, frequent desire to urinate, etc.

- No. 2. R Beechwood creosote..... fl. ʒ ss.
Lanum (Merck)..... ʒ vj.
Olive oil. ʒ ij.
Morphia sulph gr. ij.

Mix.

In gleet, urethral ulcers and chronic urethral troubles.

- No. 3. R Ung. hydrarg, U. S. P.
Ung. bismuth oxide.....ãã ʒ ss.
Morphia sulph gr. ij.

Mix. In gonorrhea and gleet.

- No. 4. \mathcal{R} Fl. Ext. Belladonna,
 Fl. Ext. Hyoscyamus.....āā 3 ss.
 Olive oil..... 3 ij.
 Lanum (Merck)..... 5 vj.

Mix. In chordee, tenesmus urina, and dysuria.

- No. 5. \mathcal{R} Iodine gr. xx.
 Alcohol fl. 3 ss.
 Glycerine fl. 5 ij.
 Lanum (Merck) 5 j.

Mix. Rub the iodine first with alcohol and glycerine, and then with the wool fat until thoroughly mixed.

In hypertrophy of the prostate, as a resolvent.

- No. 6. \mathcal{R} Pyoktanin (Blue)..... gr. x.
 Lanum (Merck)..... 5 vj.
 Olive oil..... 3 ij.

Mix. In acute and sub-acute gonorrhea.

- No. 7. \mathcal{R} Largin (Merck)..... gr. xx-xxx.
 Lanum (Merck)..... 5 vj.
 Olive oil..... 5 ij.

Mix. Twice daily in acute and sub-acute gonorrhea.

- No. 8. \mathcal{R} Ichthargan (Merck) gr. ss.
 Glycerin 3 ij.
 Lanum (Merck)..... 3 vj.

Mix. Twice daily in acute and sub-acute gonorrhea.

Nos. 6, 7 and 8 should not be exposed to the light.

- No. 9. \mathcal{R} Zinc Sulphate..... gr. ij.
 Lead acetate..... gr. iv.
 Bole Armenian..... gr. viij.
 Morphia sulph..... gr. ij.
 Glycerine 5 ij.
 Lanum (Merck)..... 5 vj.

Mix. An excellent application in sub-acute gonorrhea, after subsidence of the inflammatory stage, twice daily.

No. 10. R Thiosinamine (Merck)..... gr. xx.
Ether, sulphuric.....q. s.
Glycerin ʒ ij.
Lanum (Merck)..... ʒ vj.

Add sufficient ether to the thiosinamine to dissolve it, and rub with the glycerin and purified wool fat until thoroughly mixed.

Used as a local application every two or three days, as a resolvent in stricture and hypertrophy of the prostate gland.

All urethral troubles progress more satisfactorily when some suitable internal treatment is combined with the local applications. In gonorrhea and gleet and their sequelae, I have never found anything to equal a capsule of sandal oil, oil of cubebs, gurjun balsam, and benzoic acid, one or two to be taken three or four times a day. It is a good plan to take a digestive tablet in connection with these, or any oily capsules, as it aids their digestion and absorption. The digestive, pepsin, is too bulky for incorporation into the capsule.

These capsules can be prepared by any competent pharmacist, or in quantity by manufacturing pharmacists.

As Varicocele, Hydrocele and Hemorrhoids are frequently associated with Urethral and Prostatic diseases, and indeed often exist as causal complications, a brief consideration of these abnormalities will not be out of order. Beginning with Varicocele, Hydrocele and Hemorrhoids will follow in order.

VARICOCELE.

This is one of the most frequent causal complications of spermatorrhea and impotence with which we have to deal.

Varicocele is a dilated and torturous state of the spermatic veins. It generally occurs in the young, and is almost always confined to the left side, because the left vein is larger than the right, and more indirect in its course; but mainly because it opens into the renal vein at a right angle, thus preventing a free flow of the blood. Whatever may be the cause, the fact is that the walls of these veins give way, become relaxed, as it were, and distended, bulging out in places into little pouches, giving the vessels, when full of blood, a knotty appearance. The whole vein, in old cases, is dilated, enlarged, tortuous, cordy and knotty, feeling when taken in hand like a bundle of angle worms. The disease is one very prevalent, and although it has been known to exist for years without any serious results, in the majority of instances it results in wasting of the testicle, spermatorrhea and impotence, and sooner or later impairs the general health by nervous irritation, inducing dyspepsia, dragging sensations in the groins, lumbago, pain in the back, general depression of the system, despondency, gloomy forebodings, etc. The irritation produced in the generative organs by varicocele acts as both an exciting and continuing cause of spermatorrhea, and retards its cure. If the disease is only slight, and does not affect the general health, it will usually be sufficient to use such palliative treatment as may be necessary to relieve the weight and dragging sensations and produce contraction of the enlarged veins.

This consists in wearing a pelvic appliance constructed on the principle of an elastic truss, with two soft pads to

exert a moderate pressure upon the cords at the external abdominal ring, and thus relieve the weight of the superincumbent column of blood. We do not expect to effect a radical cure of the varicocele in this way, but to overcome its annoying symptoms, so that it shall not interfere with the cure of the seminal trouble invariably associated with it.

The only radical cure, however, for varicocele, is by a slight operation, which consists of ligating the diseased veins. This is done subcutaneously, without the loss of a drop of blood, and without interfering with the spermatic artery or vas deferens, or injuring the testicle itself. I have operated upon several hundred cases with the best results, a permanent cure being effected in five days, during which time the patient has to remain under the doctor's care, although not confined to bed.

The technique of the operation is as follows: Grasp the scrotum on the affected side, the patient standing, and carefully separate the varicose veins from the artery and vas deferens, with the balls of the fingers, pushing the vas deferens, which is easily distinguished by its hard, cordy feel, and the artery, recognized by its pulsations, inwardly, and keeping them separated by the thumb and finger of the left hand. Then pass a curved needle, threaded with a strong silk cord through the scrotum, between the vein and the separated vas and artery, and draw the ligature through.

The hold on the scrotum is now removed and the patient directed to lie on the operating chair. Then by taking the scrotum in the hands, leaving the ligature in the wound, you can bring the openings on each side of the scrotum, through which the needle passed, exactly opposite each other. Then pass the needle back from behind forward, through the same holes, but the needle, which should be curved, is made to return on the opposite side of the veins to that traversed in its first passage, which encloses the veins in a loop, where it is drawn through. The two ends of the cords are now tied firmly with a single knot, and then tied in a tight double knot over a cork, and the operation is complete. The pain is

sharp and sudden, but only for a few seconds, as the parts are speedily deadened, and the use of chloroform is unnecessary, and even objectionable, its after effects being more disagreeable than those of the operation. The point of ligation is about two-thirds the length of the scrotum from the bottom; i. e., at the bottom of the upper third of the bag.

I am in the habit of having patients come to my office for the operation, and returning home. They are directed to keep quiet, but are not confined to the bed. On the fifth day, by which time there is thorough union of the inner coats of the veins at the point of ligation, effecting occlusion of the mass of veins; the ligature is removed, and the wound dressed with antiseptic gauze. The operation is followed by some swelling and soreness of the testicle, for which nothing more is required than a cooling lead and laudanum lotion, but care must be exercised that the bowels are kept open daily with some saline laxative. Complete absorption of the mass is effected in about a month, during which time a suspensory is worn. Great care must be used not to include either the artery or vas deferens in the ligature. This has happened to me once or twice with the result of final atrophy of the testicle.

This operation effects a complete and radical cure of the varicocele, and it is often advisable for its psychical effect upon the patient, aside from any absolute surgical necessity. Patients with varicocele are generally monomaniacs on the subject, and are reduced to a state of hypochondria by worrying about their condition. The moment they are operated on they drop this pall of gloom and anxiety like an accursed mantle and regain their natural moods. I have had them come hundreds of miles, fully determined to submit to castration; but after being operated on for varicocele, they would return in that normal state of mind that impels a man to matrimony.

The mere occlusion of the varicose veins does not, however, remove the relaxed and elongated scrotum. To effect

this very desirable object and avoid the necessity of wearing a suspensory, the following extension of the operation is employed.

After having separated the varicose veins from the rest of the cord, as already described, and passing the ligature through the scrotum, the latter is slit up in front about one and a half inches above, and the same distance below the puncture laying open the tunica vaginalis testis and exposing the cord. Or this may be done first, and the veins isolated and ligated afterwards. This method is best with inexperienced operators, as they can then more easily separate the veins. I, however, prefer separating them first. The lower end of the slit is then brought up and attached to the upper end of the slit, by a suture; the slit then appears to run horizontally across the scrotum, instead of perpendicularly. The cut edges of the wound are next united by interrupted sutures, and the ends of the ligating cord brought outside and left about three inches long. This has the effect of shortening the scrotum, so that it forms a natural suspensory for the testicles. As in the former operation, the sutures and cord are removed from the fifth to the sixth day, according to the condition of adhesion. Neither operation is attended with any special danger or serious after effects, if properly performed, and gives that perfect satisfaction accorded all successful surgical procedures.

HYDROCELE.

AN OCCASIONAL COMPLICATION OF SEXUAL DEBILITY.

This is one of those nondescript diseases that comes, no man knoweth whence. It is simply an accumulation of serous fluid in the tunica vaginalis and its treatment is so simple that it scarcely rises to the dignity of a specialty. In fact, all that is necessary is to evacuate the fluid, of which there is usually ten or twelve ounces, with a trocar, and, after withdrawing the trocar, inject into the sac, through the canula, an irritating fluid that will set up sufficient inflammation to destroy the secreting function of the membrane. For this purpose a variety of substances, from milk or salt water, to iodine and carbolic acid, have been successfully employed. Iodine seems to be the favorite with most surgeons, from a half drachm to a drachm, mixed with an equal quantity of alcohol or water being thrown into the sac. But in my experience it often fails to cure, especially in old cases, with thickened membrane. Any of the hernial fluids may be used in the same way. Whatever fluid is employed, after injecting, the bag should be taken between the hands and massaged, as a washerwoman would wash a dishcloth, to bring the fluid in contact with all parts of the membrane. The operation is followed by considerable swelling and soreness for a week or ten days, the more the better, and after it subsides, the cure is usually complete. However, if the fluid accumulates again, the operation must be repeated. The formula which follows is one of the most satisfactory fluids for hydrocele, for the reason that it produces little or no pain at the time of the injection, although it gets in its work about the third day.

℞ Guaiacol,
 Creosoteāā ℥ ij.
 Zinc Sulphate gr. ij.
 Ext. Hamamelis, Dist.,
 Glycerine, C. P.āā fl. 3 j.

M. Sig. After evacuating, inject into the sac, and

knead the scrotum between the knuckles so as to ensure its reaching the upper part of the cavity. The following formula is a good one, in my experience.

℞ Carbolic Acid..... ℥ xc.
 Ext. Hamamelis, Dist.,
 Distilled water āā fl. 3 vj.

M. Sig. Of this mixture take 20 minims; tinct. iodine, 20 minims; fluid extract quercus alba, 20 minims; glycerine, 20 minims; distilled water sufficient to make 4 drachms. Inject the whole of it into the sac, massage, and squeeze it out.

The after treatment consists simply in keeping quiet a few days, and suspending the scrotum until the swelling and soreness subside.

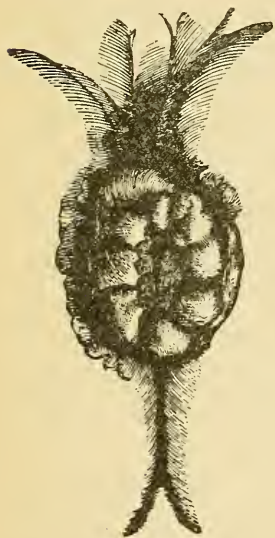
HEMORRHOIDS.

This subject is considered here by reason of the frequent association of hemorrhoids with sexual debility as a complication, and a frequent cause of spermatorrhea from transmitted irritation. For this reason they frequently require the attention of the Genito-Urinary specialist.

Much has been written in medical books about the causes of hemorrhoids; biologists assert that it is a weak spot left in the evolution of man from a four footed animal, and that it never occurs among the lower animals,—the lapsus natura consisting in the fact that the superior hemorrhoidal veins become constricted where they pass through slits or openings in the muscular wall, obstructing the passage of the blood, etc. It is true that hemorrhoids frequently result from mechanical pressure on the veins, as in pregnancy; but it is incorrect to say that constipation is one of the most prolific causes of hemorrhoids. Constipation rarely

produces hemorrhoids, which are the direct result of obstruction of the portal circulation, of which constipation, as well as piles, is a symptom. The congestion and torpidity of the biliary circulation which causes constipation also causes piles by damming up and obstructing the passage of the blood through the hemorrhoidal veins.

If my theory is correct, that hemorrhoids are simply a painful manifestation of obstruction located in the portal system, there is never any actual necessity for operating, although the relief is more prompt if we open the largest of the tumors and turn out the clot of black blood we shall find there in external and constricted internal piles.



“A BAD CASE OF PILES.”

In this illustration eight tumors are shown in a cluster around the anus. Usually, however, there are not more than two or three.

TREATMENT.

The quickest and easiest method of getting rid of hemorrhoids is a slight operation which I prefer to the injection treatment.

My method is as follows: Apply a piece of cotton saturated with a 10 % solution of eucaine or cocaine to the tumor

until its sensibility is deadened. Now slit up a few of the largest tumors with a lancet and turn the clot out; then swab out with equal parts of 95 % carbolic acid and glycerite of tannin; follow this with an alcohol swabbing; apply a sterile pad of cotton or gauze, kept in place by a T bandage.

For the purpose of destroying sensibility, the following modification of Schleich's infiltration anesthetic solution which can be injected around and over the tumor, will perfectly anesthetize the part and any amount of manipulation or cutting can be done without inflicting the least pain.

R	Cocaine Hydrochlorate	gr. iss.
	Morphine Sulphate	gr. ss.
	Sodium Chloride	gr. iij.
	Acid Boracic	gr. v.
	Aqua Destil	fl. $\bar{3}$ iiss.

Mix.

In using this and similar solutions, remember that it is not to be injected under the skin, but into the skin, just below the epidermis. Less than a minim of the fluid so injected produces a white welt, about $\frac{1}{4}$ inch in diameter, which indicates complete anesthesia of the part thus blanched. Injections are continued until the surface to be operated upon is entirely devoid of sensibility. If thrown into the skin, where the peripheral sensory nerves terminate, they are immediately paralyzed by absorbing it.

Twelve hours before the operation, administer one to two teaspoonfuls of sodium phosphate in a pint of warm water so as to move the bowels freely before operating. Proper antiseptic precautions are to be used throughout, of course. No special after treatment or further operative measures are necessary, even in the worst cases, although it is best for the patient to be quiet for a day or so. The wound, which gives no further trouble and speedily closes, must be kept scrupulously clean by frequent changes of dry absorb-

ent dressings. After the operation, the patient is to use the sodium phosphate every morning before breakfast, to unload the portal system, until the cure is complete, usually in ten to fourteen days. The same object can be attained by the use of the following preparation:

℞ Flowers of Sulphur,
Cream of Tartar,
Powdered Sugar.equal parts by weight.

Mix. One or two teaspoonfuls in a glass of water before breakfast.

The above is the formula of an English itinerant doctor, who travelled about the country several years ago, and acquired a great reputation for his wonderful success in speedily relieving and permanently curing the worst cases of piles. I have frequently prescribed it myself for internal or bleeding piles, and can testify to its intrinsic merits in both acute and chronic cases.

The Albright Wire Spring Truss.

Manufactured from Highest Grade Material Only. Equipped with any Style of Pads, Single or Double, Right or Left. Sizes, 30 to 44.

The following prices are Net, F. O. B., Philadelphia, Pa., in lots of One Dozen or Less. Orders for One Dozen or More, will be shipped Prepaid anywhere in the U. S.

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Wire Spring Trusses should retail at \$5.00 to \$6.00 for Single, and \$10.00 to \$12.00 for Double.

The circumference of the patient's body, on a line with the hernia, is the size of the truss required.

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1904

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General Practitioner as Specialist

